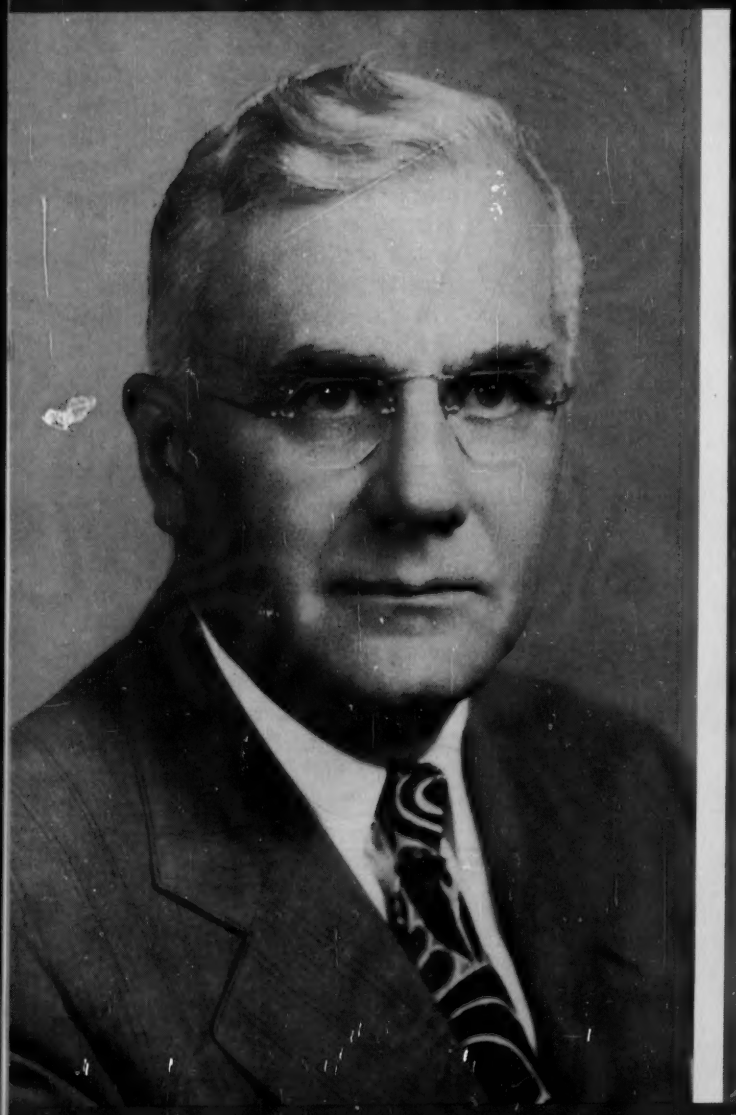
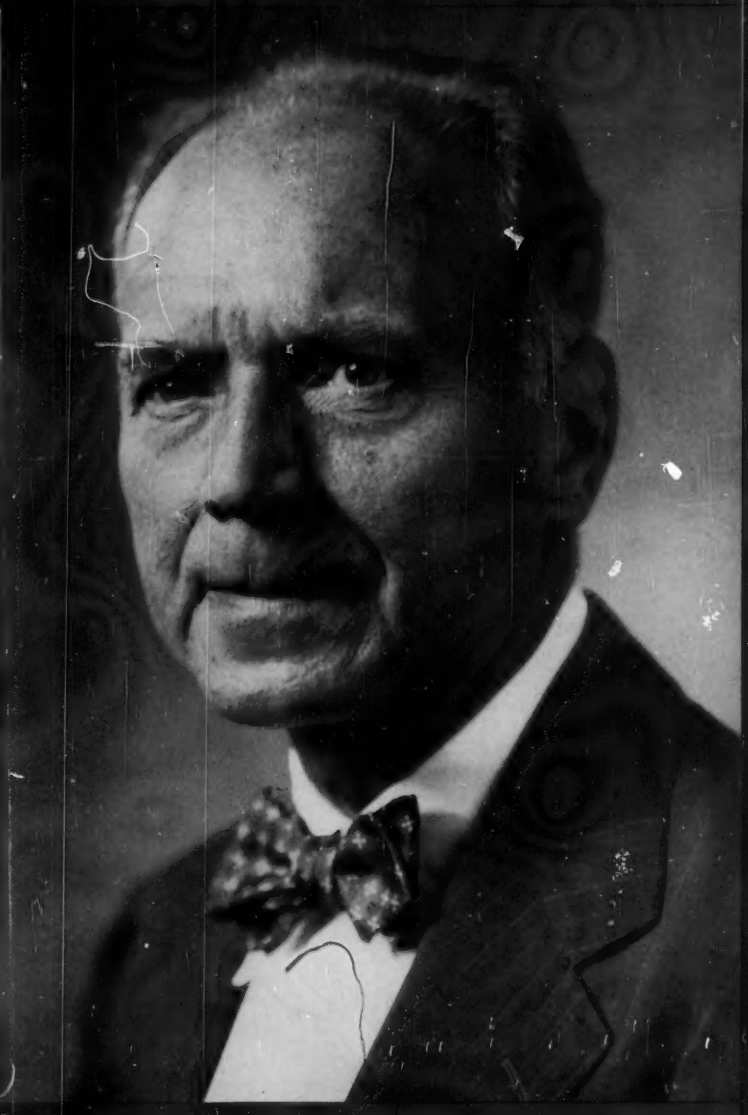
The Magazine of

STANDARDS





1955 recipients of The Howard Coonley Medal (Thomas D. Colby, left) and The Standards Medal (Dr. John Gaillard, right)

January 1955

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STANDARDS
Formerly Standardization

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THE 1954 MEDALISTS

Thomas D. Jolly was born 63 years ago in Foxburg, Pennsylvania. His great-grandfather had cleared the forest for a farm which has remained in the hands of the Jolly family up to this date. He is now the fifth Jolly to operate this family farm.

Mr Jolly studied mechanical engineering at the Carnegie Institute of Technology in Pittsburgh. He joined the Aluminum Company of America in 1915 as a draftsman. In World War I he served overseas with the 33rd Engineers. On his return to Alcoa, he was made, successively, a buyer, purchasing agent, chief engineer and director of purchases, and finally, in 1942, was promoted to his present position of vice-president in charge of engineering and purchases.

Mr Jolly is a past president of the National Association of Purchasing Agents and was awarded that organization's Shipman Gold Medal. He is a Fellow of the American Society of Mechanical Engineers. He was awarded the honorary degree of Doctor of Engineering at Rensselaer Polytechnic Institute. He was a president of the Engineering Society of Western Pennsylvania. His alma mater, the Carnegie Institute of Technology, chose him as Man-of-the-Year in 1946. In 1951 the publication *Iron Age* saluted him in a special feature for his services to the American Standards Association. He was president of ASA from 1949-1951.

Dr John Gaillard was born in Holland and was graduated as a mechanical engineer from Delft University. He was active as a patent attorney and then became acting director of the national standards body in his native country. This position provided the experience which was later to become so valuable to the American Standards movement.

Soon after World War I, Dr Gaillard came to the United States and took up work which was closely related to standards. He became an associate of Dr Gilbreth, the well-known pioneer of scientific manage-

ment and time-motion study, and the central figure of the famous book "Cheaper by the Dozen."

In 1924 Dr Gaillard became mechanical engineer on the staff of the American Standards Association. He held this position until his retirement from ASA at the end of last year. He continues to serve as consultant of standardization to ASA and to other clients.

Roy Arthur Hunt, chairman, Executive Committee, Aluminum Company of America, reading Thomas D. Jolly's acceptance address following presentation of the Howard Coonley Medal awarded to Mr Jolly.

THE AMERICAN STANDARDS ASSOCIATION

in recognition of outstanding services to the national economy through voluntary standardization

AWARDS

THE HOWARD COONLEY MEDAL FOR 1954

TO

THOMAS D. JOLLY

Citation: His outstanding engineering abilities and organizational talents are responsible for some of the most significant progress made in the national voluntary standards movement. During his three terms as president of the American Standards Association he won new acceptance and recognition for the organization, established it on a solid financial foundation, and encouraged increased participation in standards work by new and existing members. As vice-president of a great American corporation, in charge of both engineering and purchases, he has actively promoted the cause of standardization in his company, in his industry, among his suppliers, and with his customers. As a past and present member of the Hoover Commissions on Organization of the Executive Branch of the Government, and in the course of other studies on procurement practices in both government and industry, he has worked well to bring about a better understanding of nationally coordinated standards and their use by government departments. He was instrumental in creating the Committee on Standardization of the National Association of Purchasing Agents and in developing an extensive educational program among purchasing executives on the opportunities for economies through standardization. He has furthered the standards movement through many published articles and speeches and through creative participation at national and international standards conferences. As an elder statesman of the standards movement in America, he deserves the gratitude and thanks of all who seek a better world through better standards.

R. E. Gay
President

Dr. John Gaillard (right) receiving the Standards Medal from Roger Gay, then President of the American Standards Association.

THE AMERICAN STANDARDS ASSOCIATION

in recognition of service in the development of voluntary standards

AWARDS

THE STANDARDS MEDAL FOR 1954

TO

JOHN GAILLARD

Citation: His entire career has been one of selfless devotion to the cause of the voluntary standards movement and to the practical development and application of individual standards. When he came to the United States from The Netherlands, where he had been associate director of the national standards body of that country, he joined the American Standards Association and remained an ardent and creative staff member of this organization for almost three decades. He became an American citizen in 1930. For his brilliant dissertations on the fundamental concepts of standards and standardization he earned a doctorate from his Alma Mater, the Delft Institute of Technology. His prolific writings on standards for engineering and trade publications have brought him wide recognition as an outstanding authority in his field. As lecturer on standardization at Columbia University and through his seminar on industrial standardization, he has become the foremost educator in the standards movement. As secretary to many standards committees he has distinguished himself in aiding the development of standards on the working level. Through participation in many international standards meetings, he has done much to make the world of standards truly international. As engineer, teacher, philosopher, lecturer, and author, through a long and brilliant career, he has won recognition and honor in the world of standards.

R. E. Gay
President

The Fifth

A

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The Fifth National Conference on Standards took place under the auspices of the American Standards Association November 15 through 17, 1954, at the Hotel Roosevelt, New York. In conjunction with it the Thirty-sixth Annual Meeting of the American Standards Association was held November 15.

Highlights of the Conference are given on the following pages. The principal speeches are reported in the form of summaries or excerpts.

The speeches are given in full in the proceedings of the Conference, published under the title *Standards for a Strong America* (see back cover).

E

Some interesting groups at the Conference—A. Dr Frederika Carleton, representing American Home Economics Association, with ASA's Managing Director, Vice Admiral G. F. Hussey, Jr (USN, Ret), left, and 1954 President, Roger E. Gay, right. B. At luncheon table, Roy A. Hunt, Roger Gay, and Dr John Gaillard. Harry A. Winne, General Electric's Engineering Vice-President, and Western Electric's Kenneth B. Clarke, at right. C. Delegation of German engineers. Cyril Ainsworth, ASA's Technical Director, at far right.

D. Dr Hilding Törnebohm, SKF, Sweden, president, International Organization for Standardization, right, arrived in USA just in time for Awards Luncheon. He is talking with Roy A. Hunt and R. E. Grove, Ketchum, MacLeod & Grove, Pittsburgh.

E. Howard Coonley with Mrs John Gaillard.

The Howard Coonley Medal

THOMAS D. JOLLY, vice-president in charge of engineering and purchases, Aluminum Company of America, and past president of the American Standards Association, was chosen to receive the Howard Coonley Gold Medal for 1954. The award was made because "his outstanding engineering abilities and organizational talents are responsible for some of the most significant progress made in the national voluntary standards movement."

Mr Jolly was convalescing in a Pittsburgh hospital at the time of the meeting and could not be present. The medal was received for him by Roy Arthur Hunt, chairman of the executive committee of the Aluminum Company of America. Mr Hunt read the acceptance speech prepared by Mr Jolly.

In presenting the medal, Roger E. Gay, president of the American Standards Association, commented that Mr Jolly "understands equally well the two most important factors governing standardization—the engineering problems and the economic considerations."

"Both must be coordinated to make a standard practical and acceptable," Mr Gay declared. "No matter how perfect a new standard may seem to an engineer, it is useless if it shows no economic advantages to the businessman who is to buy a standardized product. Mr Jolly is two persons in one—a buyer and an engineer."

After accepting the award on behalf of Mr Jolly, Mr Hunt told of some of Mr Jolly's accomplishments.

"During World War II," he said, "Alcoa built 40 aluminum plants for the U.S. government costing 462 million dollars, at the same time that we were carrying out a 300-million dollar expansion program of our own. As vice-president in charge of engineering, Mr Jolly was responsible for the engineering and construction of these plants and for approval of their location. At the same time, as vice-president in charge of purchases, he was responsible for all purchasing involved.

"Early in 1941 he contracted for more than 16-million dollars worth of construction materials without a single actual order from the government to back it up. Mr Jolly truly realized the urgency of the defense crisis we faced. Much credit must be given to him for the fact that at no time during the war was there ever an actual shortage of aluminum metal for military purposes.

"Tom Jolly relied heavily on standards in carrying out that work. He built three aluminum sheet mills —two for the government and one for Alcoa—to a single set of standard plans. Each of the pot rooms in the government-owned plants was equipped with two six-ton electric traveling cranes. By synchronizing the requirements of these cranes, he was able to order 175 identical jobs from the builder without the need for separate drawings for each.

"We at Alcoa are deeply proud to accept this Howard Coonley Medal on behalf of Thomas D. Jolly."

The Past and Future of Standards.

Excerpts from acceptance address by Thomas D. Jolly

My first job after leaving high school was in a railroad locomotive repair shop. We had four different standards for fire hose fittings there, six for other hose fittings, and a generous stock of adapters to make them fit. A one-half inch bolt frequently had twelve threads to the inch, but, on the other hand, it often had thirteen threads.

Several years later I began to work with the Aluminum Company of America, where I learned that an electric motor with a certain horsepower was built in as many sizes as there were manufacturers. There were many different shaft diameters and heights of motors from base to shaft. We had to have a variety of mounting blocks on hand to bring them into line and a multitude of bushings for the motor pulley bores in order to hold them on the motor shaft.

In those days we had two different tapers in drill press sockets and drill shanks. When we wanted to use a particular size drill on the press, we had to select a drill with the same shank taper as the press socket, or else use an adapter. We had quite a number and variety of adapters in stock. . . .

Perhaps some of you can remember skinning your knuckles when using adjustable wrenches on nonstandard nuts and bolt heads. Engine manufacturers used to supply wrenches with their machines; otherwise we had only open-ended wrenches for use on special machinery.

Two days after I was married and moved into our new home, my wife Lois announced that she wanted dozens of electrical floor outlets in the baseboard. So I worked my head off putting in dozens of outlets. Unfortunately, I chose the kind that took plugs with prongs set at ninety degrees to one another. None of our lamp cords would fit the outlets. . . .

The thing we tend to forget is that national standards and workable interchangeability don't happen—they have to be *made* to happen. That takes the work of individual human beings—their work, patience, good will, work, money—and more work.

In 1926 a number of water and gas engineers met with manufacturers to discuss the need for standard specifications for cast iron pipe and fittings. At that time many different producers were making the pipe in a wide variety of dimensions and qualities. Almost everyone agreed that production, purchase, and use of the pipe could be greatly simplified, and the cost lowered, if the variety could be reduced to a few standard types, if dimensions could be standardized, and if other qualities could be expressed in standard terms which meant the same thing to everybody.

The American Gas Association, the American Society for Testing Materials, the American Water Works Association, and the New England Water Works Association agreed to serve as sponsors of Sectional Committee A21 set up under the auspices of ASA. Thirty-five committee members were named to represent all interested parties.

Mr Thomas H. Wiggin, a consulting civil engineer in New York City, was named chairman of the committee. In 1926 he was 57 years of age and had an international reputation as a waterworks engineer.

In 1939, after extensive research work and many meetings, the committee adopted and published a manual for the computation of strength and thickness of cast iron pipe. Mr Wiggin was still chairman.

Last year, the committee adopted seven more standards and revised two of the earlier standards. Mr Wiggin, 84 years of age, was still chairman. This is probably a national record for continuous service as committee chairman in any field.

Mr Wiggin, moreover, is *still* chairman of A21. He has been working now for three years on a revision of the 1939 Manual. His committee is drawing up an eleventh American Standard, for pipe over 12 inches in size.

Thomas Wiggin estimates that almost one-fourth of his working hours over the past 28 years have been dedicated to standardization and the ASA. As a result of his work and that of his associates, anyone who buys cast iron pipe today is benefiting from an American Standard, whether or not he is aware of the fact.

How can you place a value on such a contribution to society? Everyone has benefited, in the form of a better, safer, lower-cost product. You can't buy service like that with money—it is born of devotion to a good cause.

Another thing we tend to forget is that having a national standard is not in itself enough. Unless it has full acceptance and widespread use, we do not get maximum or even adequate benefits from it.

Complete acceptance of a standard comes only as a result of complete understanding, and understanding comes as a result of education. . . .

Engineering graduates today are receiving the best training in our history. Industry gets young engineers who are thoroughly and broadly schooled. Nevertheless, most graduates are inadequately informed on standardization—its theory, practice, and application. If you look through the catalogs or our engineering and business administration schools you will find that, with two exceptions, none includes courses in industrial standardization as such.

Therefore, a young engineer in industry trying to write a standard specification is likely to lack the elementary knowledge necessary for doing so. He is not aware of the fact that good standards come about as the result of cooperative efforts. He may set out to write a specification all by himself, and frequently the result is a document that is impractical, costly, or impossible to execute in the shop.

In other cases an inexperienced designer may ask for something special, although a standard product is available that will do the same job just as well or even better. Again, the results are increased costs through excessive inventories and maintenance or added labor.

In many instances standardization is taught superficially as a subordinate part of another course. The result is that a young engineer has a smattering of standards in his own field only, but no knowledge at all in others. Specialization is, of course, necessary in many fields, especially in research and teaching, but in the complex pattern of our industrial economy, a wider knowledge is necessary.

Where standards are concerned, a one-sided and specialized knowledge is quite inadequate. Practically everything a company designs, produces, sells, or buys is governed by standards. Standards of dimension, definition, performance, quality, and safety are closely related and interdependent. It is not enough to know only one, or even two, of these fields of standards.

Another danger is that a young graduating engineer may look upon standardization as merely a technical function without realizing that it also has an important influence on the economy and management of industry and business. He may understand that standards are necessary for weights, measurements, and quality of products, but overlook the value of standardized procedures, procurement, safety, and other factors important to management. Moreover, he may know nothing about the methods of developing standards, of getting them accepted for general use, and keeping them up to date. If he had no opportunity to learn this at college, he will find practically no facilities later on to catch up on these subjects in special training courses.

This is a serious problem. The crux of it is that most of our engineering colleges are not yet aware of the full significance of standards

in our industrial society. Our colleges are far behind industry and government in this field. Ideally, of course, our educators should be leading in the standards movement.

I am firmly convinced that standardization will be an even more dominant characteristic of the rest of this century than it was in the first half. I believe that the American Standards Association will one day truly represent all commerce and industry and will truly be the clearinghouse of all the nation's standards. I know that American Standards will one day number in the multiple thousands.

A wise man once said, "Nothing is so irresistible as an idea which has found its time." I believe that voluntary standardization is such an idea. I believe the national standards idea has found its time, and in the years ahead will be one of our great assets in winning technical advancement, prosperity, and security.

The Standards Medal

Excerpts from remarks by Dr John Gaillard following acceptance of the Standards Medal

Dr John Gaillard was recipient of the 1954 Standards Medal. Well known as Mechanical Engineer of the American Standards Association before his retirement last year, Dr Gaillard is now Management Counsel, specializing in advice on standardization problems, and conducts a private seminar. He has also been a lecturer in standardization at Columbia University.

His teaching activity may be considered Dr Gaillard's greatest achievement in the service of the standards movement, Mr Gay declared. "These teachings have introduced many hundreds of men to the basic philosophy and to the practical application of standardization," he said. "They have sown a seed which is spreading far beyond those who have actually attended Dr Gaillard's classes."

We have entered upon a new era marked by the *design* of standards to be used in planning for the future. For ages it has been customary to let standards grow up as an industry developed. They *did* grow up, independently and in a great variety which finally came to plague all parties at interest, such as manufacturers, distributors, and users of a product. Therefore, we must now apply simplification to weed out excessive variety, or unification to merge existing standards into a smaller number.

We can now *design* standards as a framework for things still to be done, so that these may form harmonious patterns from the beginning.

Design of standards may be applied to new work and also in cases where existing standards may be scrapped. An example is modular coordination of building units. Here, space is divided into four-inch cubes, and designers are asked to fit the outside dimensions of their products into this space grid so that they will blend readily into the complete structure when assembled.

Old standards were scrapped when the American Standard for thicknesses of sheet metal was established. Thirty-odd gage number systems had grown up in various metal industries. These systems were not coordinated, and sheet thicknesses were designated by nonsignificant numbers. The ASA committee discarded all of the old systems and established a single series of sheet thicknesses applicable to all metals.

Advance design of standards is a matter of primary importance to top management, one of whose major functions is planning for the future. We now can place at the disposal of top management countless stock solutions of recurrent problems which are ready to be combined into large-scale plans flexible enough to meet objectives changing with time. And since change is speeding up, planning must become faster. Organized standardization will help in achieving this.

Further progress in the use of voluntary standards will be strengthened if more people understand their essential purpose—to establish a level of desired performance or quality and to harmonize human efforts made to attain that level. It may help to show all those cooperating in such efforts that standardization contains elements of three major values in human life. It has features of a science, because the expert standardizer, in formulating specifications, always is looking for data based on experience, rather than opinion. Standardization is also somewhat of an art, because we have to use judgment in choosing values and proportions where measurement and calculation cannot be applied. Finally, a major factor in standardization is ethics, because of the important role the human element plays in it, even where the subject is a purely technical one.

Society executives—Mrs D. M. Shackleford, American Society of Mechanical Engineers; H. N. Auld, Scientific Apparatus Makers Association; M. C. Turpin, American Society of Refrigerating Engineers; R. J. Painter, American Society for Testing Materials.

ASA's Thirty-Sixth Annual Meeting

STRIKING the keynote for the Fifth National Conference on Standards, Roger E. Gay, ASA president, called for more and faster standardization work on the national and international level and for the new technologies that are springing up.

"We are in a new phase of the national economy," he said. "We hold that predetermined standards are one of the basic requirements of an orderly transition from today's mechanization to tomorrow's automation. Our plea to American industry is to build a comprehensive, integrated set of true national standards now, in advance of need. The alternative is to build them later, to unscramble a mess that never should have happened."

Goods made in the United States are useless for export unless they conform to the standards of the countries to which they are exported, Mr Gay warned. Unless this country's industry makes a formal attempt to present the American side, we may find ourselves facing a situation where international agreements among foreign countries would cause insurmountable barriers to the outward flow of U.S. goods or services, he declared. There are no American Standards translated into Spanish for use in Latin America, he said, and asked: "If you were a Chilean who could read only Spanish, and you had a choice of American Standards in English or German standards translated into Spanish, what would you do?"

Looking Ahead. Report of the Standards Council.

J. R. Townsend, *director of materials and standards engineering, Sandia Corporation, Albuquerque, New Mexico. Chairman, Standards Council.*

Science has built up a store of scientific information that is waiting to be used by industry. Industry must be ready and willing to use standardization in its preplanning work, otherwise the bungling-through process of the past will be the order of the future, with resulting inefficiencies and high costs. New safety hazards for workers in industry may result from application of atomic energy. Already, state governmental agencies are recognizing the hazards and are rebuilding regulations to control them. ASA should initiate a program at once for the development of American Safety Standards of this type so that governmental agencies will have authoritative material on which to base their regulations. Standards of measurement of radiation will be of great value to civil defense. A whole new technology is developing here.

In the international field, absence of American participation will roll up costs for American industry, because special production will be required for foreign consumption, and heavy sales effort will be needed to sell in foreign markets.

No one in sane mind would think of changing the basic principles that are the foundation of all ASA work; however, the Standards Council, the Standards Boards, and the membership of ASA must be ready at any time to permit use of methods different from those used primarily in the past. Standardization must anticipate the main currents of technical development and assist in giving form and shape to informed design and development.

The retiring chairman of ASA's Standards Council, J. R. Townsend, left, with the newly elected chairman, Arthur S. Johnson. Mr Johnson is vice-president and manager of the Engineering Department, American Mutual Liability Insurance Company, Boston, Mass.

Harold D. Hauf gave his views on the architect's role in modular planning after he received an award for his work on modular measure.

ASA's Annual Report

Among important events of the past year, Vice Admiral G. F. Hussey, Jr, Managing Director of ASA, reported that ASA has started work on new projects for all textiles and for pallets and is faced with increasing work to keep industry informed on international projects. He also announced arrangements between the American Standards Association and the National Bureau of Standards, whereby ASA will publish future editions of the Directory of Commodity Specifications, formerly published by the National Bureau of Standards. Plans are being made for the publication of the next edition within the next year or year and a half.

Modular Coordination Awards

An unusual event at ASA's annual meeting, held Monday morning, November 15, in conjunction with the Conference, was the presentation of awards to three men who have done outstanding work in encouraging the use of Modular Measure (known officially as Modular Coordination of Dimensions of Building Materials and Equipment). M. Edwin Green of Lawrie and Green, architects of Harrisburg, Pa., made the presentation on behalf of the National Association of Home Builders, the American Institute of Architects, and the Producers' Council. These organizations are sponsors of ASA Sectional Committee A62, and Mr Green is chairman of the committee.

Recipients of the citations were Harold D. Hauf, head of the Department of Architecture and chairman of the Architectural Group, Rensselaer Polytechnic Institute, Troy, N. Y.; C. E. Silling, architect, Charleston, West Virginia; and C. W. Kraft, president, Kraftile Company, Niles, California.

"For centuries buildings were constructed from comparatively soft materials—stone, wood, clay, cement, and sand—which were formed to the desired shape and size by artisans at the building site," Mr Green said on presenting the awards. "Then came hard materials—iron, bronze, and steel—which could not be conveniently shaped; therefore, industries were created to process these materials for use. In the interest of efficient production, each industry established its own standards for sizes and shapes without due regard for the sizes of other materials to which its products adjoined or were to be attached.

"To bring order out of this chaos required, first, a basic dimension or module of size which could be used in repetitive units in sizing the hundreds of different products which are used in the modern building."

"In 1945," he explained, "agreement was reached on the establishment of a module of 4 inches as a standard unit suitable for dimensional correlation, and this was formally adopted by the American Standards Association. This was followed by the adoption of modular standards for masonry, clay, and concrete units, and other materials."

"Carried to its ultimate conclusion, with building materials completely standardized on a modular basis and properly correlated with each other, it should be possible to construct a building with a minimum of cutting and fitting at the job," Mr Green declared. "The resulting economies of construction would run into the millions, if not billions of dollars per year, and its impact upon our national economy would be tremendous."

MODULAR PLANNING AND THE ARCHITECT

Harold D. Hauf

Coordination of dimensions of building materials, prefabricated products, and equipment presents the most effective basis for making the building operation at the site an assembly process rather than a hand-wrought operation. Development of drafting room methods for handling nonmodular products within a system of modular dimensions for building plans is overcoming the reluctance of architects to prepare plans using coordinated dimensions. It is the responsibility of the architects to exert leadership and use the system, since they are the professional people in the industry, and their primary interest is in the building as a whole and not in any one

M. Edwin Green presents marble cube representing the 4-in. building module to C. E. Silling for outstanding service in promoting use of modular measure.

C. W. Kraft, manufacturer of building materials, receives award for work on modular measure from M. Edwin Green.

of the building's component parts.

Teaching the modular measure concept in architectural schools does not require another course. The entire process involves thinking in terms of broad design considerations as well as in terms of details.

MODULAR PLANNING AND THE MANUFACTURER

Charles W. Kraft

In addition to gaining a sales point in faster service, a manufacturer of construction materials and equipment can count on lower costs through simplification and standardization by using the modular method. More can be done in our industry to "merchandise" the "packaged" item which has been so successful in other industries. We have our problems as an industry because we are decentralized and interdependent and because final assembly takes place on the site. In modular planning and coordination, we have both the answer to our problem and a unifying force for our industry.

PROFITS FROM MODULAR PLANNING

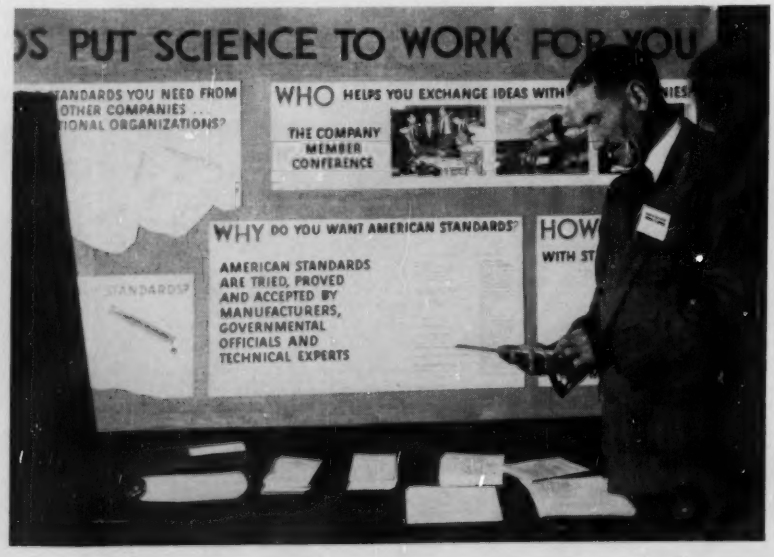
C. E. Silling

Since 1947 I have proved in my own office that modular coordination has brought order to our production methods in the drafting room, clarified the exposition of our drawings, speeded up our work materially, and furnished handsome added profits, which we share with our men. One of our men studied the American Standards on modular coordination, lectured the drafting staff one Saturday morning, and we began making modular drawings the following Monday. The conversion was that simple. Architects should use modular coordination. It makes money for them and for their clients. Our contractors prefer modular drawings even when they incorporate nonmodular-sized materials into the building. They say they estimate faster and build more easily and more profitably, because the system seems automatically to produce clearer, better organized working drawings.

At the ASA annual meeting, William Demarest, Jr, AIA Secretary for Modular Coordination (center) congratulates Charles W. Kraft on receiving the Modular Award. George Blakeslee, Solvay Process Division, Solvay American Corporation, smiles approval (left).

Some 500 representatives of ASA member organizations and guests registered for the Fifth National Conference on Standards at the Hotel Roosevelt, New York, November 15-17.

Alan F. Telfer, Canadian Standards Association, visits one of ASA's exhibits. Theme of the exhibit—Standards Put Science to Work for You—was illustrated with answers to the questions What, Who, Why, and How.


PUT SCIENCE TO WORK
WHO HELPS YOU EXCHANGE IDEAS WITH
THE COMPANY MEMBER CONFERENCE
WHY DO YOU WANT AMERICAN STANDARDS?
AMERICAN STANDARDS ARE TRIED, PROVED AND ACCEPTED BY MANUFACTURERS, GOVERNMENTAL OFFICIALS AND TECHNICAL EXPERTS

Color Television

Session sponsored by the Radio-Electronics-Television Manufacturers Association. *Axel Jensen*, Bell Telephone Laboratories, Murray Hill, N. J., presided.

The National Television System Committee as an Example of Systems Engineering and Industrial Standards.

Knox McIlwain, *Chief Consulting Engineer, Hazeltine Electronics Corporation, New York.*

The first National Television System Committee was set up in 1940. Every group in the industry was asked to sit in. This committee worked from July, 1940, to January, 1941, and came out with black and white monochrome standards on which we have built an industry that has sold some 35 million sets.

When color was first discussed, these millions of sets based on a black and white standard placed the industry in a straitjacket. It was essential from a commercial viewpoint that a color system be built which when broadcast in color would give on the ordinary black and white set a good black and white picture.

In June, 1951, the National Television System Committee for color started work. Panels were organized to cover all the different subjects. There were panels on color transcriptions; color system analysis; color video standards; color synchronizing standards. Panel 15 on receiver compatibility made tests to discover whether or not the system, in color, would give compatible pictures in black and white. Panel 16 on field testing actually tested the color receivers that the various manufacturers presented. Panel 17 on broadcast system tested the network operation of the standards.

In November, 1951, the first standards were written and everyone immediately started to build receivers. This took several months. The first field tests were held in February, 1952. By July, 1952, it became the unpleasant duty of Panel 16 to report to the main committee that the standards, as written, were no good.

By January, 1953, Panel 13 came up with the second set of standards. By March there were receivers to test.

At the final field test there were 13 different receivers from 13 different manufacturers, all playing.

The standards were deliberately designed so as to leave room for future invention and future perfection. Final agreement on standards by the committee was reached on July 21, 1953. Six months later, in December, the standards proposed were adopted by the Federal Communications System. Within a few years there will be a large flow of receivers.

We believe that the standards chosen represent the best engineering judgment at the time of their acceptance by the Federal Communications Commission as United States standards.

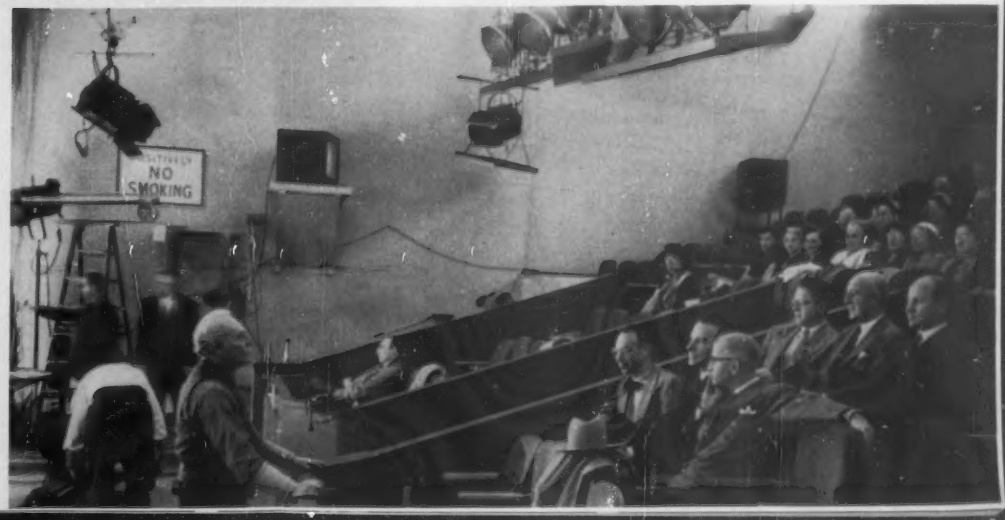
Derivation of the FCC Color Television Standard.

J. W. Wentworth. *Manager, Radio Corporation of America's Television Terminal Equipment Engineering Group.*

One of the most significant new developments in the television art is the evolution of compatible color television which operates within the broad framework of the older monochrome standards but which requires the introduction of new features in the standard radiated signal. The purpose of this paper is to trace a logical technical derivation of the compatible color television signal specifications, with particular emphasis on the importance of standardization of certain parameters. The author first reviews the major technical principles employed in monochrome television. He then discusses the colorimetric aspects of color television, color television as a transmission problem, the "packaging" of color picture information, and the multiplexing principles for compatible color television. He then reviews a complete color television system, from camera to kinescope.

Strict standardization in broadcast television is applied only to the radiated signal, he explains.

Knox McIlwaine (left, above) described the work of the National Television System Committee. J. W. Wentworth (center) told how the standards were worked out. Axel Jensen (right) presided at the television session.



During a tour of NBC's color television studio, Charles Ruggles took time out to speak to the guests. ►

Standards for Safety

Their Nature and Value

Session sponsored by the American Society of Safety Engineers.
Moderator—Edward R. Granniss, Manager, Loss Prevention and Engineering Department, Royal Liverpool Insurance Group.

American Society of Safety Engineers and Safety Standardization.

Henry B. Duffus, *Administrator, Department of Accident Prevention, Westinghouse Electric Corporation, Pittsburgh; chairman, Safety Standards Board, ASA; chairman, Safety Standards Committee, ASSE.*

ASSE is represented in more than 40 American Standards Safety projects, and is co-sponsor of four. Also, ASSE members are assisting on practically all of ASA's 155 safety standards committees. However, we find that we have but scratched the surface of this ever-broadening field. Industrial research and development laboratories are now turning out products that involve processing operations with exposures that are beyond the control of the five senses. This points up an urgent need for new standards indicating safe tolerances. Also, we have but scratched the surface where standards for present industrial exposures are concerned. In the case of explosion hazards there is zirconium, as well as titanium, barium, chlorates, and perchlorates. In the field of occupational health and safety there is carbon tetrachloride, frequently used freely, with little or no regard for its fatal toxic affect, and trichlorethene, the fumes of which break down into phosgene, a deadly gas, when it is used in the vicinity of welding operations.

The Society recently decided to enlarge the scope of its research effort. Future projects may include further research on safety shoes, wire rope testing, a possible new method of measuring gas and vapor concentrations, and electrostatic potentials created by flowing fluids.

American Safety Standards—Demonstration of Industrial Self-Government.

Arthur S. Johnson. *Vice-President and Manager of the Engineering Department, American Mutual Liability Insurance Company, Boston, Mass.; chairman-elect, ASA Standards Council.*

"If you have liberty, you must accept the responsibility of self-discipline," said Jefferson. Although he referred to personal liberty and political responsibility, the statement of principle includes liberty of enterprise as well.

While accidents may be a function of danger, safety is a function of management. Operating efficiencies do not reach maximum until accidents are controlled to minimum. For each action which is to be repeated a great many times, the one best way can be discovered and described. Where the one best way reduces the risk but increases the cost out of all proportion, something less than the best way—the best in view of all the circumstances—can be agreed upon as a compromise.

ASA's consensus principle means that all legitimately concerned with a project have not only the right to be heard but have also the right to be recognized as competent to contribute their experience and opinion. Under the ASA method, an examination is made of the makeup of a standards drafting committee and its vote to consider: (*a*) the weight of a single economic interest, to prevent domination by a pressure group; (*b*) the relative experience of those casting the negative votes; (*c*) the economic impact of the standard upon the economic status of those casting the negative vote; and (*d*) the objectivity of the affirmative vote.

Too much emphasis cannot be placed upon the idea of participation by all who are legitimately concerned.

Some 200 American Safety Standards have been developed. The scope covered is vast. There is no limit in sight for their expansion.

The object in all cases has been to define a safe condition. They represent primary controllable conditions that can be inspected and demonstrated.

The trend is now prevention of chance accidents. The modern industrial undertaking is a complicated, complex arrangement of power-operated machines and tools. Safety means the ability to predict successful operations without interruption and with a high degree of certainty. The trend definitely will be in the direction of standards of safety in the design of operations. Adherence to these disciplines will be likely only to the extent that the standards are industry-wide, and that all parties concerned contribute to their design.

Of great importance, too, are the standards used by testing laboratories in certification and labeling of apparatus when the certification is to demonstrate its safety to the user.

Obedience to the unenforced standard is the highway to self-discipline, freedom from accidents, and true freedom of enterprise.

Standards for the Conservation of Hearing in Industry.

Walter A. Rosenblith. *Mr Rosenblith is Associate Professor of Communications Bio-Physics, Department of Electrical Engineering, Massachusetts Institute of Technology, and chairman of subcommittee Z24-X-2 Project on Bio- and Psycho-Acoustic Criteria.*

Important factors in the noise problem are not only the total amount of exposure and the total sound energy that a man has absorbed but also "How has this energy been packaged? Which kinds of packages have been shoved into his ear at a given time?"

There is also a second problem—that of individual susceptibility. A man may wear an ear plug and feel temporary relief from annoyance, but this does not mean that he is protecting his hearing. We need objective measurements of the effect of noise, and we need to describe the kind of noise quantitatively. It is also necessary to take into consideration individual susceptibility. In solving the problem of noise it will be necessary to make compromises and to determine how many people, considering their individual variations, we want to protect. It is also necessary to decide what kind of a hearing loss you are willing to take.

The real way to find a solution is to investigate thoroughly the kinds of exposure workmen in factories undergo and check their hearing periodically.

Within a reasonably short time —two or three years—we ought to be able to write a tentative series of standards.

A

Walter A. Rosenblith speaks on conservation of hearing; Edward R. Granniss, Moderator, listens.

B

Labor organizations are concerned about unqualified workmen endangering others, Bryce P. Holcombe, AFL, said.—B

C

Donald C. Brand, Monsanto Chemical Company (left); D. F. Hollingsworth, E. I. duPont de Nemours & Co. (center); and W. H. Kiler, duPont (right).—C

Bryce P. Holcombe, AFL (left); Henry Lamb, ASA, Safety Engineer; and Henry B. Duffus, chairman of ASA's Safety Standards Board (right) confer.—D

D

Edward R. Granniss, Royal Liverpool Insurance Group, was Moderator for the Safety Session.—E

Arthur S. Johnson called safety a function of management and adherence to voluntary safety standards true freedom.—F

E

F

INTERNATIONAL STANDARDS

and what they mean to the American Electrical Industry

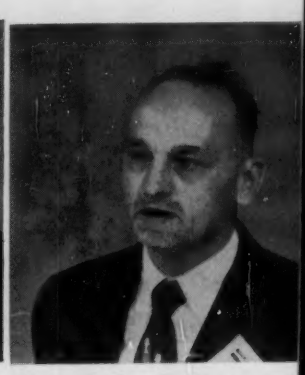
Some of the work done at the meetings of the International Electrotechnical Commission at Philadelphia, September 1-16, was reported by U.S. delegates. R. C. Sogge, General Electric Company, and President of the U. S. National Committee of the International Electrotechnical Commission, presided.

Dr H. S. Osborne

R. C. Sogge

Leon Podolsky

B. C. Thorn



Ellsworth F. Seaman

Components for Electrical Circuits.

Leon Podolsky. *Technical Assistant to the President, Sprague Electric Company; chairman, International Standards Committee, Radio-Electronics - Television Manufacturers Association; chairman, ASA Committee on Electronic Components, C83; Technical Advisor on IEC 40, Components.*

A committee of U.S. experts had worked during the six months prior to IEC meetings to organize U.S. views on each proposal on the agenda of Technical Committees 12a, Crystals; 12-3, Components; and 12-5, High-Frequency Codes and Connectors.

The meeting on crystals was informal, permitting free discussion between European and American delegates. A specification on quartz crystal units, originally developed without the USA viewpoint, was reviewed. Decisions on nomenclature and critical frequencies of crystal units now await a forthcoming U.S. Institute of Radio Engineers proposal.

TC 12-3, Components, had before it an existing IEC Publication 68, covering basic procedures, equipment, and methods for testing components. On recommendation of the USA delegation, all requirements for bump testing were suspended. A special work group, with France, the Netherlands, United Kingdom, and USA represented, will study recommended revisions, reconcile differences of opinion, and coordinate laboratory tests. Four specifications were completed and are being circulated under a six months' trial rule procedure. They cover paper dialectric capacitors, electrolytic capacitors, ceramic capacitors, and composition resistors. Color code standards for marking paper dielectric capacitors and for ceramic dialectric capacitors are to be circulated for editorial corrections.

On recommendation of this committee, a new technical committee, TC 40, is taking over all IEC work on components.

TC 12-5 on High-Frequency Cables and Connectors approved a revised specification table for 50- and 75-ohm cables introduced by the U.S. delegation. Tolerances specified are in accordance with the proposed RETMA standards for cables.

Major decisions were reached on general requirements and test methods for cables, and a number of tests proposed by the USA were accepted. The U.S. National Committee was asked to propose a test for dimensional stability.

Mr Podolsky called on Ellsworth Seaman of U.S. Navy's Bureau of Ships, who has "done a magnificent job" as international chairman of IEC subcommittee 12-3 and continues as international chairman of IEC Technical Committee 40. Mr Seaman told of the meeting on Pan American standards (MAG OF STDS, Dec, 1954 p 387).

Organization and Work of the IEC on Electrical Insulation Material.

Dr A. H. Scott. *Staff member, National Bureau of Standards, Washington, D.C.; chairman, ASA Sectional Committee C59 on Electrical Insulating Materials; Technical Advisor on TC 15, Insulating Materials.*

A compromise was reached on a proposed revision of IEC Publication No. 34, which contained a method of temperature classification of insulating materials. The U.S. delegation agreed to the addition of two new temperature classes not recognized in the revised classification of the American Institute of Electrical Engineers, AIEE No. 1.

The original proposal had attempted to list materials in each class. However, U.S. delegates believed there was not sufficient experience to permit such a listing. As accepted, the revision provides that a material or combination of

materials may be included in a class whenever it is shown, either by experience or by an accepted test, to be capable of operation at the temperature covered by that class. Work on functional tests is already being done by AIEE.

Seven working groups were set up by the committee.

voltage switchgear consists of five chapters on power circuit breakers. Work is starting on high-voltage disconnection switches and on low-voltage switchgear and controlgear. A standard on fuses below 1000 volts has been completed and published and work started on fuses for applications above 1000 volts.

Virgil Graham

Dr A. H. Scott

V. L. Cox

Progress in Power Switchgear.

V. L. Cox. *Manager, Laboratories Department, Switchgear and Control Division, General Electric Company, Philadelphia; chairman, ASA Sectional Committee C37 on Power Switchgear; Technical Advisor, USNC TC 17 on Switchgear.*

Until about 1949, we in the United States took a very passive attitude toward international standards for switchgear. Then we suddenly realized that, whether we liked it or not, there were going to be standards. It also became apparent that if we did not take an active part in their preparation, they would not reflect the requirements of the United States in any way.

Delegates from 14 countries attended the Philadelphia meetings. U.S. delegates and observers numbered more than 35, representing both users and manufacturers. The AIEE Switchgear Committee presented a new and simplified method of rating power circuit breakers for discussion and comment.

International work on power switchgear has recently been expanded to cover both switchgear and controlgear. The work on high-

Development of World-Wide Turbine Standards.

B. C. Thorn. *Turbine Specialist, International General Electric Company; secretary, U.S. Advisory Group on Steam Turbines; secretary, International Advisory Committee, TC 5.*

Agreement was reached on a revised edition of Publication 45, IEC Recommendations on Steam Turbines, Part 1—Specification. A revision of Part II, Rules for Acceptance Tests, and Instruments and Methods of Measurement, is under way.

The revised IEC turbine specifications will be of great value to industry, because all the facets of a basic turbine are defined.

TC 5 is now proceeding to define the rules for acceptance tests.

New Developments in Electron Tubes.

Virgil Graham. *Associate Director of Engineering, Radio-Electronics-Television Manufacturers Association; secretary, ASA Sectional Committee C60 on Electron Tubes. Mr Graham has served as chief delegate to three international meetings of IEC Technical Committee 39.*

As one editor has said, "You can't sell tubes unless they fit the equipment." European variants of our octal and lock-in bases would probably not now be in existence if we had been active earlier in the IEC work on tubes.

At Philadelphia, work started at previous meetings on such subjects as tube bases, over-all tube dimensions, connector caps, and gages was continued.

USA proposals on tube characteristic measurements (IRE) as well as tube capacitance measurements (RETMA-NEMA) were well received. The first will become an information document; the latter will be edited to include some European types and will be considered as an IEC Document.

What the Future Holds for International Standardization.

Dr Harold S. Osborne. *President, International Electrotechnical Commission; former president, American Institute of Electrical Engineers.*

In 1952 and 1953, the Commission published a total of 6 such reports, an average of 3 a year. In 1954, 11 have been published, and, in addition, 7 were approved for publication at the Philadelphia meetings. Furthermore, 40 more reports were approved for circulation to the national committees for final approval. I see no reason to doubt that the work of the IEC will expand.

The future of international standardization depends in large measure on what we in America do to push it along.

I hope that America's increased familiarity with the work, which was a by-product of the Philadelphia meetings, will result in a large increase in our delegation next year.

Since general meetings cannot be held in America very often, there should be held here, perhaps each year, a small meeting of one or two committees.

Company Standardization

Sponsored by the Committee on Standardization of the National Association of Purchasing Agents and the ASA Company Member Conference

Definitions of the Areas of Standardization.

Vice Admiral G. F. Hussey, Jr, USN (Ret), *Managing Director, American Standards Association.*

In 1945, a resolution before ASA's Board of Directors provided that "in order to be suitable for approval by the American Standards Association, a standard shall be sufficiently definite and conclusive to form criteria by which one skilled in the art may determine where material, work, product, process, procedure, operation, or usage conforms to the standard."

This extends standardization to fields other than engineering and recognizes that a standard should be a tool usable by one skilled in the art. The fact that standards are likely to be couched in terms intelligible only to those particularly well versed in the field has given some concern. Standards which make up the group known as L22 for Rayon and Acetate Fabrics, for example, are plain as day to textile technologists, but are almost worse than Greek to a homemaker.

The areas found in every company are shown on the chart—as well as the aspects of each that may be standardized.

A beginning standards engineer might select a few easy problems so he can lay three or four bright and shiny new standards on the boss's desk early in the game and thus convince him of the value of standardization in accomplishing something for the company. In making the selection, he should consider the areas in which the standardization will be most profitable for the company. He must remember that the best standards are produced by developing a consensus.

Aspect To Be Standardized	Areas									
	PERSONNEL	ADMINISTRATION	ENGINEERING	PROCUREMENT	MANUFACTURING	SALES	PACKAGING	STORAGE AND SHIPPING	MATERIALS HANDLING	MAINTENANCE
NOMENCLATURE	x	x	x	x	x	x	x	x	x	x
DIMENSIONS			x	x	x	x	x			
OPERATING CHARACTERISTICS			x	x	x	x				x
METHODS OF TEST			x	x	x	x				
SAFETY	x	x	x	x	x	x	x	x	x	x
PROCESSES			x		x				x	x
PROCEDURES	x	x	x	x				x		x
MATERIALS			x	x	x		x			

Recent Developments in American Surface Finish Standards.

Roy P. Trowbridge. *Standards Engineer, Engineering Standards Section, General Motors Corporation, Detroit.*

After approximately two years of intense activity on the part of subcommittees of Sectional Committee B46, technical committees of the sponsor societies, and task groups in the government services, a proposed revision of American Standard B46.1-1947 and B46.2-1950 has been completed. The revision reflects an extremely broad consensus of American industry.

The revised standard is concerned with geometric irregularities of surfaces of solid materials, physical specimens for gaging roughness, and characteristics of instrumentation for measuring roughness. It establishes definite classifications for roughness, waviness, lay, and a set of symbols for drawings, specifications, and reports. It also provides specifications for precision reference specimens, roughness comparison specimens, and establishes requirements for tracer-type instruments. It does not define the degrees of surface rough-

New officers of the Company Member Conference for 1955 — M. C. Olsen (left), Head of Specifications Department, National Cash Register Company, Dayton, Ohio, chairman; J. R. Walgren (right), Aluminum Company of America, Pittsburgh, Pa.; vice-chairman.

E. H. Weaver (below)

Vice Admiral G. F. Hussey, Jr, USN (Ret), ASA's Managing Director.

ness and waviness or type of lay suitable for specific purposes. However, criteria for selection of surface qualities are included in appendices.

The root-mean-square average rating is eliminated in this edition and the arithmetical average rating adopted, reflecting a consensus that arithmetical average is more readily understood and adaptable to a wider range of instrumentation. Many manufacturers consider it practical to adopt arithmetical average ratings without changing the roughness values on previous part drawings.

The British have also standardized on arithmetical average, which they refer to as center line average or CLA. Roughness-width cutoff is defined in the revised standard and standard cutoff values established, eliminating one of the major causes of misinterpretation of instrument reading. Taylor, Taylor & Hobson, British instrument manufacturers, have generously donated to the U.S. a patent on circuitry which provides for variation of roughness-width cutoff in stylus-type instruments.

Standardization of instrument detail is intended to eliminate variables which have led to differences in measurements on a given surface by different makes of instruments; however, it still allows freedom of internal design.

It is planned that increasing interest in and knowledge of the subject will justify frequent reviews of the standard to keep pace with progress.

With this edition we believe we are now ready with an up-to-the-minute proposal on surface finish which can serve as a basis for American - British - Canadian unification and, possibly, for ISO discussions.

What the National Association of Purchasing Agents Is Doing in Standardization.

E. H. Weaver. *Vice-President, Union Oil Company of California, Los Angeles; chairman, Committee on Standardization, National Association of Purchasing Agents.*

The main objective of our committee is to popularize the over-all concept of standardization. Our policy lays great emphasis on education. Within the purchasing profession there has been a mistaken concept that the engineering profession had prior rights in standardization.

As part of its education program, the NAPA Standards Committee cooperated with the NAPA Education Committee in publishing a booklet, *Standards — A Procurement Tool.* Several reprints have been necessary. The committee also produced a packet on standardization for distribution to officers of local purchasing associations throughout the United States and Canada. This contained the book mentioned above, ASA's price list, and *The Strange Case of the Seven-Sided Post Hole,* as well as a few selected talks and articles on standardization, and a suggested organizational procedure for initiating a standards program within a company. A bibliography on standardization was also included.

The committee now has under preparation another booklet to explain the "how to do it" of standardization.

In NAPA, the district chairman, in cooperation with local association chairmen, are responsible for carrying on the standardization program outlined by the National Committee on Standardization. Standardization is being given increasing recognition in the programs of district meetings. Since 1950, the subject has been given a prominent place on the general convention session program and at forum meetings.

The American Standards Association, What It Is and What It Does, was the theme of one of ASA's exhibits at the Conference. Here, Ellsworth Seaman studies the publications displayed.

Below left, the late Edward T. Gushée (right) joined ASA's Admiral Hussey (left) and newly elected Company Member Conference chairman M. C. Olsen (center) for a chat between sessions.

Delegates asked Roy P. Trowbridge (left) for more information on surface finish standards after he presented his paper.

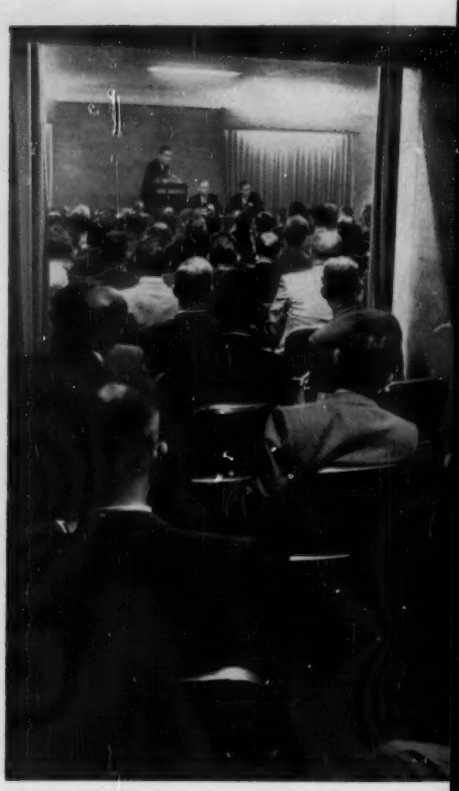
What the Purchasing Agent Wants from the Engineer in Standardization.

Nelson J. Gibbons. *Methods and Purchasing Engineer, Motor Wheel Corporation, Lansing, Mich.*

Most of the time the engineer and the purchasing agent are so busy jealously patrolling what they sincerely believe to be their sacred boundaries that they waste energy hunting poachers instead of game. The cure for this is to get over on the other side of the fence and take a look around. A little visiting back and forth will help dispel preconceived ideas and pave the way for cooperative and constructive action. Standardization, to succeed, must rise above departmental thinking.

The purchasing agent wants from the engineer an understanding and acceptance of what he can contribute to the program. He wants an awareness and an understanding of the human relationships that enter into business dealings. He wants you to appreciate the fact that you can determine loads to the fraction of a horsepower, but human frailty cannot be figured with a slide rule or a formula. He wants you to believe that his deficiency in figuring stresses and strengths of materials is compensated for by a proficiency in cost analysis and vendor evaluation. He wants from you understanding that a design, a package, or a procedure which is right today may require revision tomorrow.

If the purchasing agent and engineer work together like a couple of fellows on either end of a cross-cut saw, each giving of his special talent and accepting the special talent of the other, a mutually satisfactory agreement on standards comes naturally.



Interest in company standards and purchasing resulted in an overflow audience—here, close attention is given to Roy Trowbridge's description of changes being made in a new edition of the American Standard on surface finish.

What the Purchasing Agent Wants from the Engineer in Standardization.

William R. Murray. *Director of Materials and Purchasing, Bigelow-Sanford Carpet Company, Inc, Thompsonville, Conn.*

I talked with some of my colleagues about what purchasing agents want in standardization from engineers. We were from different industries — mechanical, electrical, and textile—yet there was never any question as to the things we all wanted:

(*a*) An open mind on the revision of existing standards to provide for change or substitution in whole or in part; (*b*) Whenever possible, an alert awareness of and a determination to use existing commercial or industry standards; (*c*) A standard that is clear, complete, understandable, and acceptable to more than one supplier.

Suggestions for improvement or cost reduction could pertain to design, type of material, finish, packaging, or even the method of testing. They could come from the suppliers or originate in your own organization. For example, various economic conditions have made possible substitution of one standard commercial material for another which has had long traditional use in our industry. The saving would approximate $500,000. The change was suggested by our purchasing division several years ago. We all would argue interminably that we have an open mind. When are we going to start using it?

Concerning (*b*), why is there always someone in every organization who believes that his particular brain child must have a hole or a bolt a few thousandths off standard or a yarn in the textile industry off standard a fraction of a count?

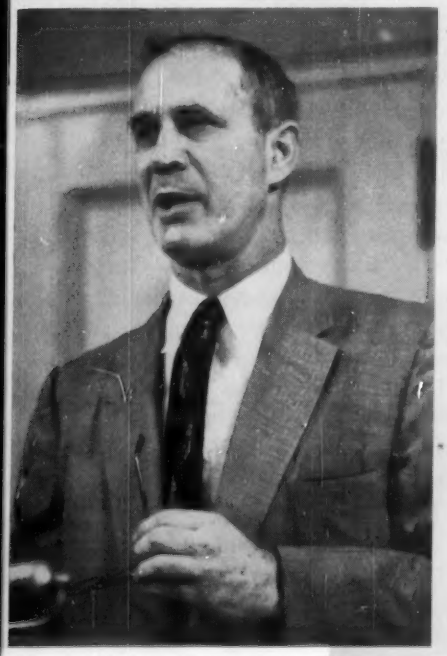
As for point (*c*), no company should be completely tied to one supplier for any important product, material, or part, if the quantity and nature of the item justifies more than one vendor. No buyer worth his salt is going to be happy about any standard that compels him to depend on or buy from one supplier. If a proper specification cannot be written, or if the expense of writing one might not be justified, at least you should specify "X" brand or the equivalent.

At the purchasing session—Left to right, Nelson J. Gibbins; William R. Murray; M. C. Olsen, newly elected CMC chairman; W. B. Fleming, former CMC chairman; Henry Lamb, ASA staff and secretary of CMC.

John Major, Moderator of the quality control session, explains a point on "How to keep a quality control program going" to an interested questioner.

Thomas A. Budne (above) discussed quality control as it applies to a cigarette manufacturing plant.

Dr Ellis R. Ott (below) outlined the principles on which statistical quality control operates, emphasizing the need for continuing education.



Evaluating the Results of a Quality Control System in the Plant

Sessions sponsored by the Metropolitan Section of the American Society for Quality Control. *Moderator—John Major,* Chairman, Metropolitan Section, The American Society for Quality Control; Director of Quality Control, Colgate-Palmolive Company, Jersey City, N. J.

L. Grant Hector. *Vice-President, Sonotone Corporation, Elmsford, N. Y.*

A quality control program can provide three new and constructive contributions. The first is an extension of the data-taking and analysis used to prepare control charts. Extending these data sufficiently will give information not only on the trend of quality but also on the reasons for such a trend.

The second concerns "planned experiments." By extending the mathematics used in quality control, it is possible to predict the shortest, fastest way to find the answer to a problem. For example, in the radio tube field there is a big "exhaust" machine that performs various functions. Besides exhausting the tubes, it starts to process them. After the tubes come off this machine, they go through another series of processes, and the two series are dependent on one another.

The machine turns out as many as 1000 tubes an hour. When a machine breaks down, you are doing well if you can avoid a shutdown of less than five hours, a production loss of 5000 tubes.

To take care of such an emergency you can set up in advance a series of planned experiments. By pulling out only a few tubes you can continue to manufacture tubes, taking some shrinkage, and run your planned experiment test at the same time. The total average of downtime on such machines then becomes about one hour instead of five.

The third contribution is in the field of coordination. Back in 1947 we had difficulty making hearing aids uniform. Tubes were manufactured in one plant of the company. Hearing aids were manufactured in another plant of the company. All of the design work was done in a laboratory which had a good bit of independence. The circuit people in the laboratory did not have much communication with the manufacturing group on hearing aids, nor did they have much communication with the tube designers.

The quality control group had established a reputation in these plants for being fair, and their recommendations were acceptable to everyone. Therefore, the quality control group collected data from the plant on what was wrong with the finished product, discussed possible remedies with the tube people, and found out what the engineering group could do. Thus it insured cooperation among the three groups.

Ellis R. Ott, *chairman, Department of Mathematics, Rutgers University, New Brunswick, N. J.*

Even after a quality control program is started in a plant, instruction must be continued at many levels. Sampling plans, techniques of planned experimentation, new methods of investigation, all must be taught. Until program, technique, and idea are correlated, little will be accomplished. Thus we must educate all parties concerned in the essential aspects of idea and technology and in the need for an effective synthesis of these aspects.

Who needs to be taught? The vice-president in charge of technical operations must be familiar with the functions of a quality control program. Middle management—in production, supervision, plant management, engineering — needs education. In the purchasing department it is important to see that the money spent for machine parts buys maximum efficiency. People in the

L. Grant Hector (left, above), principal speaker at the quality control session, stirred active interest in his company's work with the statistical method as indicated by the after-session demand for more information.
Among interested spectators at one of the Conference sessions was Willis S. MacLeod (left, foreground, below), Director, Standards Division, General Services Administration, Federal Supply Service. With Mr MacLeod (right, foreground) is J. W. McNair, ASA's Assistant Technical Director.

company who have frequent contact with customers and check their complaints can get important suggestions to carry into manufacturing operations. They should be trained in the essential aspects of quality control.

People trained in and familiar with inspection plans are needed so that information can be relayed to the particular source of trouble. Anyone in a supervisory position needs to be trained.

Workmen throughout the industrial hierarchy must understand the importance of their function in making quality goods. Quality does not depend solely on the control department, the production department, or the design engineer. It is a function of all concerned with industrial output.

Costs are a direct factor in the quality control program. To reduce costs, we must reduce scrap 100 percent. Another means of cutting cost is to reduce customer complaints.

Dollars speak louder than words. If we expect widespread use of the quality control system, we must demonstrate the economic as well as the theoretical advantages of the system.

Thomas A. Budne, *assistant to the vice-president, Philip Morris Corporation, New York.*

What constitutes quality in a cigarette? We cannot be concerned here with what makes the consumer like a cigarette better—individual preferences, taste, habit, and so on. What the manufacturer can be concerned with is uniformity.

Tobacco cost is approximately one dollar a pound. If the average tobacco content of a cigarette is just a thousandth or a couple of thousandths of a gram higher than it need be, the cost to the cigarette company can be thousands of dollars. Quality control enters the picture to obtain the highest degree of uniformity possible with the particular manufacturing equipment. The manufacturer is then able to set his target at a point which, economically, is most advantageous to him.

Symposium on Standards for Agriculture

Paul Arnold, Assistant to the Technical Director, Ansco Division, General Aniline and Film Corporation, Binghamton, N. Y., presided at this session.

Seed Quality Factors and Seed Standards.

Dr B. E. Clark. *Head, Department of Seed Investigations, New York State Agricultural Experiment Station, Geneva, N. Y.*

Seed standards are essentially quality standards. Mechanical purity; genetic purity; physiological condition; and pathological condition are the four major quality aspects of seeds.

"Mechanical purity" refers to freedom from dirt, chaff, and seeds of other crop or weed plants.

"Genetic purity" refers to the pedigree of the seed and its freedom from genetic admixture with other varieties. Winter hardiness and disease resistance are among the performance characteristics associated with this aspect.

Physiological condition is important primarily from the standpoint of germinability.

Both seed-borne diseases and seed treatment must be considered in connection with pathological condition of seed.

The International Seed Testing Association and the Association of Official Seed Analysts of North America are primarily responsible for standard procedures for testing seed quality. All seed-testing laboratories in the United States and Canada follow the procedures adopted by the Association of Official Seed Analysts; European laboratories follow International Seed Testing Association procedures. The rules of these groups apply to agricultural and vegetable seeds but not to tests of flower seeds or of seeds of many trees and shrubs. Standard ways for detecting seed-borne diseases and measuring genetic purity are receiving consideration.

Seed standards have been used most effectively in seed-certification programs. The certification agency issues tags to label each bag of certified seed.

We in the seed world are proud of our standard testing procedures and our certification standards, although we realize there is considerable room for improvement.

Harold Brookins

C.E. Hilton read J.E. Archer's speech

Paul Arnold

Dr Herbert L. Haller

Establishment of Common Names for Pest-Control Chemicals.

Dr Herbert L. Haller. *Asssistant Director of Crops Research, Agricultural Research Service, U.S. Department of Agriculture, Washington, D.C.; Chairman, ASA Sectional Committee K62, Common Names for Pest-Control Chemicals.*

Many of the new pesticidal chemicals have long or complicated technical names that have meaning only to chemists and other specialists. These are not readily adaptable for use in farmers' bulletins and similar publications. Proprietary, brand, or trade-marked names for chemicals are subject to similar limitations. Some chemicals have been designated by a combination of letters or numbers that have been carried into commercial use, such as DDT, BHC, 1080, etc. However, these are not only difficult for libraries to index but also are easily confused with other chemicals with similar initials or numbers. For example, MCP has been used for many years as the designation for nomocalcium phosphate, which is used both as a drug and in foods. Several years ago this same designation was adopted for a weed killer.

In 1947, Dr S. A. Rohwer, chairman of the Interdepartmental Committee on Pest Control (made up of federal government departments

Dr B. E. Clark

Richard P. White

Paul Arnold, Moderator (left), answers questions.

interested in the problem), won the cooperation of scientific groups in developing short names for pesticidal chemicals that could be remembered easily. The American Medical Association, the American Phytopathological Association, the American Chemical Society, the American Association of Economic Entomologists (now the Entomological Society of America), and the federal government departments that were members of the Interdepartmental Committee, were among those cooperating. By 1951, names had been coined for eight insecticidal chemicals, five fungicides, and one rodenticide.

World-wide interest was shown at the Third International Congress of Crop Protection (Paris, September, 1952).

Now the International Organization for Standardization has a project, TC 81, in which USA is a participating member. In 1953, the Interdepartmental Committee on Pest Control discontinued its work on approval of coined names for pesticidal chemicals and suggested that the American Standards Association explore the possibility of organizing a national project to carry on the work. This was done, and Sectional Committee K62 was organized with the U.S. Department of Agriculture and the National Agricultural Chemicals Association as co-sponsors. Dr Herbert L. Haller, Assistant Director of Crops Research, Agricultural Research Service, U.S. Department of Agriculture, is chairman, and J. A. Noone, National Agricultural Chemicals Association, Washington, D.C., is secretary. The committee is preparing a proposed American Standard procedure for the acceptance of an American Standard common name for a pest-control chemical.

The International Standards Problem on Common Names for Pest-Control Chemicals.

J. E. Archer. *Director, Patent Division, American Cyanamid Company, Stamford, Conn.*

ASA Sectional Committee K62, acting as the U.S. committee for ISO/TC 81, has developed proposals for the establishment of common names for pest-control chemicals. It recommends that the sponsor of a proposed common name certify that a search has been made to determine whether the proposed name conflicts with any existing trade-mark or common name for other chemicals, and submit its findings.

It may be necessary to protect the common names selected by treaty among the various countries concerned. This is a long-range proposition, however. In the meantime, to prevent use of the name for other purposes, the name should be registered under the trade mark laws of the various countries.

There is no ideal solution to the problem of obtaining acceptance of a common name for a product on a world-wide basis. However, with the help of ASA Sectional Committee K62 and with the work of ISO/TC 81, many of the difficulties encountered in the past can be overcome.

Standards for Nursery Stock

Richard P. White, *Executive Secretary, American Association of Nurserymen.*

Commercial disputes and misunderstandings between wholesale producer-supplier and retail merchandiser as to grading of trees and shrubs and the meaning of trade terms and names were among the problems that directed attention to the need for standards.

Standardization of living things presents problems not encountered in standardization of manufactured articles. In seasons with a favorable climate growth is favorable and the size and quality of the product is above standard. In other seasons, the agriculturist may have to contend with drought, over which he may exert partial control by irrigation; or with floods, over which he has no control. His product may be reduced in quality by insect or disease attacks over which he may or may not have partial control.

The first standard, in 1911, was for the method of measuring deciduous trees and was for use in quoting on stock to the trade purchaser.

Work was started on standardization of grading, trade terms, and abbreviations in 1916. The first Horticultural Standards, adopted in 1923, contained grading tables for deciduous trees and fruit trees as well as rules and definitions for grading other plants such as evergreen trees, shrubs, and vines.

Standardized plant names, color standards, and nomenclature were adopted in 1923. From time to time these standards have been revised and expanded.

The industry's *Horticultural Standards* became the American Standard for Nursery Stock in 1949. It now covers most of the plant groups produced or handled by the industry — shade trees, deciduous shrubs, evergreens, roses, vines, fruit trees, small fruits, asparagus crowns, lining-out stock, reforestation, and soil erosion plants. In the near future it is planned to include bulbs, corms, and tubers.

This American Standard is generally accepted by purchasing agencies and the trade. It is sufficiently definitive to protect the buyer from the unscrupulous merchandiser but also sufficiently flexible to take into consideration the vagaries of nature. This technical material is being rewritten for distribution to the consumer. Those concerned believe that extension of these standards for the education of the consumer will bring additional benefits to the industry and will be helpful in further protecting the consumer from deceptive offers and fraudulent operators.

Development of Uniform Standards for Florists' Cut Flower Crops.

Harold Brookins. (*Jerry Brookins, Inc, Orchard Park, N. Y.*) *Chairman, Grading Committee, New York State Flower Growers, Inc.*

The Society of American Florists appointed a special committee on grading standards in 1950. The principal difficulty has been that flower growers generally have favored any grading system that would give high rating to their own current production and have a tendency to market their own product under their own individual and widely varying standards. This individual grading lacks the continuity and interchangeability that could be achieved by the general use of uniform standard grades.

The primary purpose of uniform standard grades, establishing grade limits for individual flowers, is to make the merchandise more readily salable and to assure the purchaser that the flowers within any unit of sale shall be completely useful for the intended purpose.

The following points have been established: Four standard grades will adequately classify the material for most florists' crops. Weight of the individual flower correlates closely with quality in flowers. Weight of the individual flowers, coupled with length of stem, and in some cases number of open florets (snapdragons) and flower diameter (chrysanthemums) serves to sort flowers accurately into a series of qualities or grades. Grade names adopted are Special, Fancy, Extra, First, from high to low in that order.

Those who believe in uniform standards for cut flowers recognize that this is not a short-term program. It involves changes in the basic thinking of the individuals in an entire industry. Those who have persisted in their grading efforts long enough to gain experience report satisfaction and improvement in their marketing program.

What's Ahead for Standardization

Session sponsored by the Conference of Executives of Organization Members of ASA. *Lester W. Benoit,* Executive Secretary, Manufacturers Society of the Valve and Fittings Industry, presided. *L. C. Morrow* was moderator.

New Horizons for the Technical Press.

L. C. Morrow. *Consulting Editor, Factory Management and Maintenance; Director, Special Editorial Services, McGraw-Hill Publishing Company, Inc.*

A quick look at what is ahead for the technical press itself is described in a group-project report written by eight second-year students at Harvard Graduate School of Business Administration. It is called *(R)EVOLUTION in the Printing Industry.*[1] It describes an integrated printing system of the future where news and stories can be transmitted from distant points via wire to the central facility, where it passes through "typesetting" machines and is stored on magnetic tape or magnetic cylinders. Editorial matter will be fed into the electronic typesetter, possibly by tape. Color pictures can be transmitted by wire to an image recorder and stored magnetically or electrically. Images and text will be composed in page form on an electronic measuring device. The make-up of the page will be relayed by wire to the branch printing plant. The "press" will be an integrated machine or an automatic series of machines with self-adjusting controls to perform printing, collating, folding, binding, wrapping, addressing. The mechanism will print addresses electronically, then arrange and tie the material in bundles according to geographical destination. It might also be possible to bombard a stack of sensitized paper (10,000 or more sheets at a time) with some shaped form of radiation so that all the sheets can be printed simultaneously.

Such progress in the printing industry will not be made unless it is accompanied by extensive standardization.

As for the broad outlook, between now and 1970, U.S. gross national product will grow from $367 billion to $560 billion; population will increase from 156 million to more than 200 million; the labor force will rise from 65 million to 82 million; annual replacement and modernization of capital goods are likely to cost $40 billion by 1970; the number of hospitals and elementary schools will double; consumption of electrical energy will triple; production of chemicals will jump 150 percent; passenger-car output will probably reach 7.5 million as compared with 6.2 million in 1953.

It does not strain the imagination

[1] For copies, write to Printing Research, Box 125, Cambridge 38, Mass.

to picture the essential job that will be done by standards and standardization in such a great surge of production.

Frontiers for Standardization in the Chemical Process Industry.

John Mellecker. *Editor, Chemical Engineering Progress.*

The use of chemical processes in the manufacture of its products is the common bond that unites this diverse industrial group which includes chemicals, alcoholic beverages, synthetic fibers, cement, coal products, explosives, fertilizers, glass and ceramics, leather, coated fabrics, textile wet processing, soaps and detergents, surface coatings, paper, petroleum refining, pharmaceuticals, plastics, rubber, electric batteries, and sugar. The rapid pace of new product development and plant expansion has given these industries the reputation of "glamour industries." Their facilities have a high rate of obsolescence, making them amenable to improvement through equipment and materials standards. However, their method of operation makes the broad application of standards difficult.

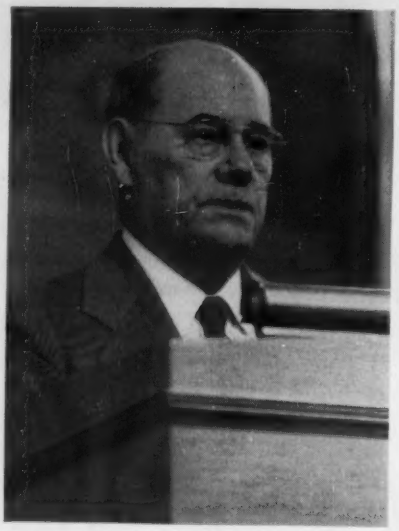
Those chemical process industries that are more closely attuned to rapid technological advances present the greatest problems where application of standards is concerned. There is, for example, a trend toward automation of process plants. Automation, however, cannot be achieved economically without a much higher degree of standardization of purchased and maintained products than at present.

The extensive pattern of secrecy practiced throughout certain of these industries is not conducive to standardization.

A great deal is yet to be accomplished in standardization of dimensions of products purchased by the process industries. There are endless examples of the need for standardization in well-established types of equipment such as heat exchangers. New types of equipment also create quite a problem.

The American Institute of Chemical Engineers has a number of equipment testing procedure committees at work concerned with absorbers, mixers, distillation units, driers, pumps, and corrosion testing, among others. Each group has developed nomenclature and is turning out test codes.

"ASA's Standards Council now has a membership of 55 nationally recognized professional societies, consumer organizations, trade associations, and trade groups. These organizations might be called the stockholders of ASA. Each one is represented on the Council by one, two, but no more than three, spokesmen. The Council is the heartbeat of ASA and guides policy and program in



L. C. Morrow (above), acted as moderator of the technical session. Frank J. Oliver (below), called attention to the opportunities for technical magazines to develop viewpoints on proposed standards.

How a Publication Can Further the Standards Movement.

Frank J. Oliver. *Editor, Electrical Manufacturing.*

A publication can approach standards from several points of view. A routine approach would be to report the availability and source of standards as they are issued. A publication can influence the writing of standards by reporting work in progress, thus acting as a sounding board for various groups. Through its editorial page, a publication can take a direct hand in steering standardization. The publication can act as a critic. Having no ax to grind, the publication can generally take a disinterested attitude and suggest logical procedures to follow or compromise solutions to be applied where the views of several groups appear to be in conflict. On more than one occasion, *Electrical Manufacturing* has attempted to reconcile the work of diverse groups by inviting comment for publication, thus directing the

the development of standards. It also serves in a judicial capacity, insuring adherence to democratic procedures under which American Standards come into being."— ROGER E. GAY. *Below, the Council acted on approval of the National Plumbing Code at its meeting Nov 17, 1954.*

Lester W. Benoit, Manufacturers Standardization Society of the Valve and Fittings Industry, chairman of CEOM, opened the technical press session. Left to right below—John Mellecker; F. J. Oliver; Mr Benoit; L. C. Morrow, Moderator; S. F. Heinritz; B. K. Ledgerwood.

program toward ultimate acceptance through ASA procedures. The publication can sometimes take the initiative by doing independent research which will guide those working on standards for practices for which information is not otherwise easily obtainable. And a publication can show by example how standards are put to work and how applicable standards will help solve current design problems.

The work *Electrical Manufacturing* has done in promoting international standards on insulation illustrates a few of the methods mentioned.

By reporting work as it progressed and presenting both European and American proposals and comments, we feel that we have done much to ease some of the tension caused by conflicting American and European viewpoints.

In the October 1954 *Electrical Manufacturing*, the effect of NEMA's rerate program on totally enclosed, nonventilated motors was examined. By allowing one motor manufacturer to present in our pages a suggested approach to the problem, we believe that needed reaction can be elicited from users before anything is frozen in committee.

Electrical Manufacturing has reported consistently on the electrical standards drawn up by the Joint Industry Conference, and has expressed editorially the hope that these standards combined with NMTBA Electrical Standards might be subjected to ASA procedures with the object of approving them as American Standard.

Last July, *Electrical Manufacturing* raised the question editorially whether Article 670 of the National Electrical Code, an American Standard, should be expanded, limited in scope, or eliminated.

In the case of relay standards, the magazine performed several functions — reporting, supporting, and, in a small way, helping to guide a program that we believe is essential to the national welfare.

The Purchasing Man and Standardization.

Stuart F. Heinritz. *Editor, Purchasing; author of Purchasing Principles and Applications.*

Initiative for standardization can well come from the purchasing department. One of the recent major developments in all modern theory and practice in the field of scientific purchasing is the concept known as "value analysis." This is the process of engineering unnecessary costs out of the products that are bought. A number of different techniques contribute to successful cost-saving value analysis. Among these, standardization is one of the simplest, most readily acceptable, and most potent.

It is logical that standardization programs should be initiated, coordinated, and actively encouraged by the purchasing department. More and more, purchasing departments are accepting this responsibility as a constructive service to their companies beyond the mere act of buying.

The purchasing agent's part in a company standardization program is one of recommending and coordinating.

The Need for Standardization in the Control Field.

Byron K. Ledgerwood. *Associate Editor, Control Engineering.*

Terminology is a real problem in the automatic-control field, and has become more severe as the field has advanced technically. Industrial process control has a jargon of its own that has developed over the years. Servo technology, used originally in military control work, has a completely different terminology based essentially on the mathematics of control-system dynamics. Now servo - mechanism techniques and equipment are creeping into the industrial control field. The allied field of data processing and data reduction equipment and computing equipment has yet another langauge.

The only universal means of expression seems to be mathematics,

but some equivalent mathematical functions are called by different names by the various segments of the field. Then, too, how many managements will purchase equipment to a specification written in the language of mathematics?

We predict that the activities of the committee on automatic-control terminology now being organized by ASA will proceed at a fast pace for many years because of the ever-increasing rate of technical advances in this field.

The Recommended Practices Committee of the Instrument Society of America is studying the problem of specifying the dynamic performance of transmitting and control equipment for the industrial process industries. Test specifications will have to be written also. In the servo field the problem is in buying electromechanical equipment that fits together. Servo - component manufacturers are furthering standards established by the Navy Bureau of Ordnance.

The digital-computer business and the data-processing equipment in inventory and production operations use common types of components. Availability of present equipment has already forced some standardization. The automatic typewriter on the output of the computers is an example.

There is a definite need for standardization to accelerate the industrial use of computers and data-processing equipment.

We must change standards to keep abreast of the technical advances that are certain to come in the field of automatic control.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering please refer to the number following the title.

621.1 STEAM, STEAM ENGINES, BOILERS

United Kingdom (BSI)

Steam receivers and separators	BS 2079:1954

Germany (DNA)

Different forms of corrugation of insulators	DIN 48108
Different forms of wire binding clamps	DIN 46207
Joint box for power cable up to 10 kv	DIN 47600, B1.1, 3
Switchgear contact tips	DIN 43603
Receptacle, 2-pole with safety contact and cap, 15 amp, 250 v	DIN 49440
Receptacle, 2-pole with safety contact, watertight, 15 amp, 250 v	DIN 49443
Electrical resistance thermometers	DIN 43760
Trough batteries, types C and D	DIN 43572, B1.3
Electric fodder stewing kettle	DIN 44890/1
Rules for protection against high voltage in medical x-ray installations	DIN 6821
Selection of dry rectifier for safety apparatus for electric machinery	DIN 40050, Ausw.5
Lead-in insulators for transformers	DIN 42532
Pantograph current collector for overhead lines	DIN 43187
Collector shoe for conductor rail system	DIN 43240
Tramway controller handwheel	DIN 43310, B1.1

Poland (PKN)

Choice of high voltage instruments depending on short circuit	PN E-05002
Electric heaters for domestic use	PN E-06201
Medical apparatus of low frequency and dc	PN E-06206
Lighting installations. General	PN E-06305
"T" and "K" types of flanges of electric machines	PN E-80401
3-phase step-down oil transformers 2500-10,000 kva, 110 kv, 50 cycles	PN E-81101
3-phase step-down oil transformers for overhead lines, 16,000-31,500 kva, 110 kv, 50 cycles	PN E-81102
Clamps for steel conductors, overhead lines	PN E-92317
Dry battery cells, classification	PN T-02500
Electric traffic light system	PN T-05550
Rods for cable installation	PN T-55002
Type S 1 of dry battery cell	PN T-89200
Telephone cable for local network	PN T-90002

Spain (IRATRA)

Aluminum wires for electrical conductors	UNE 21014

621.13 RAILWAY STEAM LOCOMOTIVES

Germany (DNA)

Self-closing cock for water level indicator	DIN 33261
Tie rod nut for brakes	DIN 37116
Handrail stanchion	DIN 36015
Stopcock	DIN 33031
Water faucet, curved and straight spout	DIN 33035/6
Flanged drain cock, 25- and 40-mm bore	DIN 33060, 33062
Large water gage	DIN 33244
Protective conduits and fittings for electric wiring on locomotives	DIN 38231
Washhole of locomotive boiler	DIN 32129
3 standards for boiler cocks	DIN 33061/3
Pipe and cock attachment devices	DIN 33360
Locomotive and tender wheel tires, unfinished	DIN 38300
Adjusting apparatus of brake-shoes	DIN 37080/2
Feed water connection	DIN 36503/4

Spain (IRATRA)

Boiler cross tie-rods	UNE 25053

621.18. STEAM BOILERS

Australia (SAA)

Fusible plugs for boilers	AS B.30-1954

621.64 DEVICES FOR CONVEYANCE AND STORAGE OF GASES AND LIQUIDS

Czechoslovakia (CSN)

Pumps, general data	CSN 11 0010
Rotative pumps, general data	CSN 11 0020
Centrifugal pumps for mines	CSN 11 3915
5 standards for different flanges	CSN 13 1411/5

Japan (JISC)

Cast iron flanged service valves	JIS B 2044

Sweden (SIS)

O-rings: sizes, material, mounting	SMS 1586/8
6 standards for different types of flanged valves	SMS 1213/8

United Kingdom (BSI)

Ferrous pipes and piping installations for and in connection with land boilers	BS 806:1954
Capillary and compression fittings of copper and copper alloy for use with copper tube complying with BS 659 and BS 1386	BS 864:1953
Copper alloy globe valves for general purposes	BS 2060:1953
Fire hose and suction hose couplings, branch pipe and nozzle connections	BS 336:1954
Olive, soldered nipple, and flared types of copper and copper alloy tube fittings (for use with fractional o.d. sizes of tubes) for engineering purposes	BS 2051: Part 2:1954
Floats for ballvalves (plastics) for cold water	BS 2456:1954
Hose couplings for petrol, oil, and lubricants (¾-in. to 4-in. nominal sizes)	BS 2464:1954

621.85 FLEXIBLE TRANSMISSION

Germany (DNA)

Flat rubber belts	JIS K 6321*
V-belt, rubber	JIS K 6323

Japan (JISC)

Disk coupling	DIN 116
Conveyor rubber belt	JIS K 6322

621.86/.87 HOISTING AND CONVEYING MACHINERY

Czechoslovakia (CSN)

Rubber-belt conveyors	CSN 263300
Travelling bucket elevator	CSN 26 7102

Finland (SFS)

4-way pallets	EI 11

Germany (DNA)

Bolts, nuts, and washers for conveyor belts	DIN 15237

Japan (JISC)

Rubber belts for conveyor use	JIS K 6322*

Netherlands (HCNN)

Cardboard pallets	N 3008
Fork trucks	V 3054

Poland (PKN)

Hand signals for crane movements	PN T-01301

Spain (IRATRA)

Pulleys for calibrated link chains	UNE 18024

Sweden (SIS)

Chains for hoisting machines	SMS 1507

United Kingdom (BSI)

Chains and wheels for single bottle width slat conveyors	BS 2075:1954
High pedestal or portal jib cranes	BS 2452:1954
Derrick cranes (hand operated)	BS 327:Part 2:1954

New Zealand (NZSS)

Standard specification for doors	NZSS 1158, May, 1953
Code of practice for timber preservation	NZSS CP 4, Feb , 1953

Poland (PKN)

Softwood lumber	PN D-94005
3 standards for wood for different purposes	PN D-94010/2
Raw material for manufacturing plywood	PN D-95011
Test for resistance of wood in direction of fibers	PN D-04105
Wood wool for packaging	PN D-94008

Spain (IRATRA)

4 standards for different carpenter's tools	UNE 41029/32

676 PAPER INDUSTRY

Czechoslovakia (CSN)

Cellulose sulfite, unbleached	CSN 50 1210
Cellulose sulfite, bleached	CSN 50 2130
Newsprint in rolls	CSN 50 2101
Wood pulp paper "Havanna"	CSN 502448
Asphalt paper	CSN 503460

Germany (DNA)

Testing paper and pasteboard	DIN 53111/2; 53120

Netherlands (HCNN)

Paper testing: determination of wire and felt sides of paper	N 1764
Paper testing: determination of bursting strength of paper	N 1765
Paper testing: determination of passage of air	V 1768

Portugal (IGPAI)

Hygrothermal conditioning of paper	NP-27
Determination of the direction of paper manufacturing	NP-16
Sampling paper for analysis	NP-21

Sweden (SIS)

8 standards for different paper labels for beer and soft drink bottles	SIS 37 03 00/37 03 07

677 TEXTILE INDUSTRY

Czechoslovakia (CSN)

Test method for shrinkage of fabric in washing	CSN 80 0340
Linen fibers	CSN 80 1210/1
Ready-made underwear	CSN 80 7050
Basic types of gauze, laces, embroideries, etc	CSN 806000

Germany (DNA)

Testing asbestos and asbestos products	DIN 52911
Yarn count	DIN 60910

Sweden (SIS)

Cotton cloth. General regulations for production and testing	CSB-30
Domestic cotton cloth	CSB-32
Cotton sheeting 200 g/m²	CSB-34
Cotton cloth for mattress	CSB-37
Cotton cloth for dusters	CSB-39
Striped cotton cloth for mattress	CSB-44
Cotton warp satin	CSB-49
Cotton scouring cloth	CSB-66

United Kingdom (BSI)

Weft pirns: Part 1. Section A: Pirns for rewinding cotton and spun rayon yarns	BS 2098: Part 1A:1954
Weft pirns: Part 1. Section C: Parallel fit pirns for direct spinning cotton and spun rayon yarns	BS 2098: Part 1C:1954
Cloths for boys' knicker suits	BS 2473:1954
Weft pirns: Part 2. Weft pirns for shuttles in pirn-changing automatic looms	BS 2098: Part 2:1954
Methods of test for the weight per unit length and per unit area of woven or knitted fabrics	BS 2471:1954

677.05 TEXTILE MACHINERY

Germany (DNA)

Saw-tooth wire for spinning machines	DIN 64122
Steel wire for heddle	DIN 64603

India (ISI)

Solid bobbins for dry jute spinning frames	IS 502

Portugal (IGPAI)

Designation of the direction of twist in textile yarn	NP-19

678 RUBBER INDUSTRY

Czechoslovakia (CSN)

Testing rubber for friction wear-out	CSN 62 1466
Marking of tires	CSN 63 1000
Tires for baby carriages	CSN 63 5011, -5110
Solid rubber tires	CSN 63 5150/1
3 standards for raw rubber testing	CSN 621425; -621458; -621461
Testing automobile tires	CSN 631007
Testing automobile tubes	CSN 631009
Rubber hoses for compressed air purposes	CSN 635365
Van Rossem method of test for ageing rubber	CSN 62 1528
Storing and taking care of rubber products	CSN 63 0001
Tolerances for rubber products	CSN 63 0100
Rubber V-belts	CSN 63 5040
Rubber hoses and tubes	CSN 63 5320; -5358

France (AFNOR)

Special guide-belt for paper box machines	NF T 47-107
Measurement of viscosity of liquid latex	NF T 42-011
Tension test of rubber	NF T 43-002

United Kingdom (BSI)

Methods of testing raw rubber and unvulcanized compounded rubber: Part 2: Methods of chemical analysis	BS 1673: Part 2:1954
Methods of testing rubber latex: Part 2: Chemical and physical tests	BS 1672: Part 2:1954

681.12 CONSUMPTION METERS

Israel (SII)

Cold water meters, velocity type, 2-in. size or larger	SI 104

681.2 INSTRUMENT MAKING

Czechoslovakia (CSN)

6 standards for different dial-type indicators, series:	CSN 25 1800 . . .
26 standards for different types of gages, series:	CSN 25 3100 . . .

681.26 WEIGHING MACHINES, WEIGHTS

Germany (DNA)

Laboratory weights form 0.5 mg to 1 kg	DIN 1924, B1.2

681.61 TYPEWRITERS

Czechoslovakia (CSN)

2 standards for Latin and Cyrillic key boards	CSN 01 6906/7

682 BLACKSMITHERY

Poland (PKN)

Building iron work	PN B-06840

683 HARDWARE, IRONMONGERY

India (ISI)

Door springs, rat-tail type	IS 452
Double-acting spring hinges	IS 453

69.009.182 BUILDING REGULATIONS

South Africa (SABS)

Comprehensive model building regulations. Chapter 3. Loads	SABS 024-1952
Comprehensive model building regulations. Chapter 12. Drainage and water supply	SABS 033-1953

691 BUILDING MATERIALS

Canada (CSA)

Specifications for brick and hollow tile	CSA A82 Series-1954
Specification for gypsum wallboard application	CSA A82.31-1954
Specification for design requirements for reinforced gypsum concrete	CSA A82.32-1954
Specification for poured-in-place reinforced gypsum concrete roof decks using permanent formboards	CSA A82.33-1954
Specification for gypsum formboard	CSA A82.34-1954
Specifications for reinforcing materials for concrete	CSA G30 Series-1954

France (AFNOR)

Hydraulic binders. Test for cracking	FD P 15-351
Hydraulic binders. Test for shrinkage and swelling	FD P 15-352

Germany (DNA)

Cement tiles	DIN 1116; 1118
Partition boards of light cement	DIN 18162

Israel (SII)

Asbestos-cement corrugated sheets	SI 110
Specifications for concrete work	SI 102
Weight of materials and of parts of building	SI 109

AMERICAN STANDARDS

STATUS AS OF JANUARY 4, 1955

Legend

Standards Council — Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.

Board of Review — Acts for Standards Council and gives final approval as American Standards; action usually requires 2 weeks.

Standards Boards—Approve standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

Arbitration

In Standards Council —

Commercial Arbitration, Z73.
Sponsor: American Arbitration Association.

Building

American Standard Approved —

Building Code Requirements for Reinforced Gypsum Concrete, A59.1-1954 (Revision of A59.1-1945).
Sponsors: The Building Officials Conference; The Gypsum Association.

In Standards Council —

National Plumbing Code, A40.8.
Sponsors: American Public Health Association; American Society of Mechanical Engineers.

In Board of Review —

Gypsum Plastering, Specifications for, A42.1 (Revision of A42.1-1950).

Interior Lathing and Furring, Specifications for, A42.4 (Revision of A42.4-1950).
Sponsors: American Institute of Architects; American Society for Testing Materials.

In Standards Board —

Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, A58.1 (Revision of A58.1-1945).
Sponsor: National Bureau of Standards.

Gypsum Wallboard, Specifications for, ASTM C36; ASA A69.1 (Revision of ASTM C36-52; ASA A69.1-1952).
Sponsor: American Society for Testing Materials.

Non-Spark Conductive Oxychloride Composition Flooring and its Installation, Specifications for, A88.9.
Sponsors: American Society for Testing Materials; National Bureau of Standards.

Standard Submitted —

Standard Types of Building Construction, NFPA 220; ASA A110.
Sponsor: National Fire Protection Association.

Withdrawal Being Considered —

Plumbing Code, A40.7-1949.
Sponsors: American Public Health Association; American Society of Mechanical Engineers.
NOTE: With approval of the National Plumbing Code, A40.8, this standard will be withdrawn.

Consumer Goods

American Standard Published —

Methods of Testing and Tolerances for Certain Wool and Part Wool Fabrics, ASTM D462-53; ASA L14.28-1954 (Revision of ASTM D462-52; ASA L14.28-1953) $0.25.
Sponsors: American Society for Testing Materials; American Association of Textile Chemists and Colorists.

In Board of Review —

Rating and Testing Home Freezers, Method of, B38.3.
Sponsors: American Society of Refrigerating Engineers; U.S. Department of Agriculture.

In Standards Board —

Sampling and Chemical Analysis of Alkaline Detergents, Method of, ASTM D501; ASA K60.21 (Revision of ASTM D501-49; ASA K60.21-1950).
Sponsor: American Society for Testing Materials.

Standard Submitted —

Computing Food-Storage Volume and Shelf Area of Automatic Household Refrigerators, Method of, B38.1 (Revision of B38.1-1944).
Sponsors: American Society of Refrigerating Engineers; U.S. Department of Agriculture, Bureau of Home Nutrition and Home Economics.

Electrical

American Standard Published —

Power-Operated Radio Receiving Appliances, C65.1-1954 (Revision of C65.1-1952). $0.25.
Sponsor: Underwriters' Laboratories, Inc.
These requirements cover Power-Operated Radio Receiving Appliances for noncommercial use, designed to be employed on interior wiring systems in accordance with the National Electrical Code, C1. In so far as they apply, noncommercial or domestic phonographs, record players, recorders, and similar equipment are also included.

American Standards Approved —

Measurement of Aspect Ratio and Geometric Distortion of Television Cameras and Picture Monitors, Methods of, 54 IRE 23.51; ASA C16.23-1954.
Sponsor: Institute of Radio Engineers.

Polyphase Induction Motors and Generators, Test Code for, C50.20-1954.
Sponsor: Electrical Standards Board.

Gas Filled Radiation Counter Tubes, Methods of Testing, 52 IRE 7.52; ASA C60.11-1954.
Sponsor: Joint Electron Tube Engineering Council.

Measuring Noise in Electron Devices, Methods of, 53 IRE 7.S1; ASA C60.13-1954.
Sponsor: Joint Electron Tube Engineering Council.

In Standards Board —

Terms for Audio Techniques, Definitions of, 54 IRE 3.S1; ASA C16.24.

Measurement of Interference Output of Television Receivers in the Range of 300 to 10,000 kc, 54 IRE 17.S1; ASA C16.25.
Sponsor: Institute of Radio Engineers.

Schedule of Preferred Ratings for Power Circuit Breakers, C37.6 (Revision of C37.6-1953).
Sponsor: Electrical Standards Board.

Switchgear Assemblies and Metal-Enclosed Bus, C37.20.
Sponsor: Electrical Standards Board.

Terms of Electron Tubes, Definitions of, C60.9.

Terms of Magnetrons, Definitions of, C60.10.

Terms of Gas-Filled Radiation Counter Tubes, Definitions of, C60.12.
Sponsor: Joint Electron Tube Engineering Council.

Standard Submitted —

Terms in the Field of Linear Varying Parameter and Nonlinear Circuits, Definitions of, *Submitted by:* Institute of Radio Engineers.

Project Initiated —

Terminology for Automatic Controls, C85.
Sponsor: American Society of Mechanical Engineers.

Gas Burning Appliances

American Standards Approved —

Addenda (Z21.1b-1954) to American Standard Approval Requirements for Domestic Gas Ranges, Z21.1-1952. $0.50.

Addenda (Z21.6b-1954) to American Standard Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6-1949, R1952. $0.40.

Addenda (Z21.10a-1954) to American Standard Approval Requirements for Gas Water Heaters, Z21.10-1953. $0.50.

Approval Requirements for Gas-Fired Room Heaters, Z21.11-1954 (Revision of Z21.11-1949). $2.00.

Listing Requirements for Gas Valves, Z21.15-1954 (Revision of Z21.15-1944, R1952). $2.00.

Addenda (Z21.28a-1954) to American Standard Approval Requirements for Portable Gas Baking and Roasting Ovens, Z21.28-1948.

Addenda (Z21.31a-1954) to American Standard Approval Requirements for Gas Counter Appliances, Z21.31-1941, R1947.
Sponsor: American Gas Association.

Materials and Testing

American Standards Approved —

Copper and Copper-Base Alloy Forging Rod, Bar, and Shapes, Specifications for, ASTM B124-54; ASA H7.1-1954 (Revision of ASTM B124-52; ASA H7.1-1953, 2nd ed).

Seamless Copper Water Tube, Specifications for, ASTM B88-54; ASA H23.1-1954 (Revision of ASTM B88-51; ASA H23.1-1953).

Seamless Copper Pipe, Standard Sizes, Specifications for, ASTM B42-54; ASA H26.1-1954 (Revision of ASTM B42-52; ASA H26.1-1953, 2nd ed).

Red Brass Pipe, Standard Sizes, Specifications for ASTM B43-54; ASA H27.1-1954 (Revision of ASTM B43-52; ASA H27.1-1953, 2nd ed).

Copper-Silicon Alloy Wire for General Purposes, Specifications for, ASTM B99-54; ASA H30.1-1954 (Revision of ASTM B99-51; ASA H30.1-1953).

Rolled Copper-Alloy Bearing and Expansion Plates and Sheets for Bridge and Other Structural Uses, Specifications for, ASTM B100-54; ASA H31.1-1954 (Revision of ASTM B100-52; ASA H31.1-1953).

Leaded Red Brass (Hardware Bronze) Rod, Bar, and Shapes, Specifications for, ASTM B140-54; ASA H33.1-1954 (Revision of ASTM B140-52; ASA H33.1-1953, 2nd ed).
Sponsor: American Society for Testing Materials.

In Board of Review —

Primer for Use with Asphalt in Dampproofing and Waterproofing, Specifications for, ASTM D41-41; ASA A109.1.

Asphalt-Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D226-47; ASA A109.2.

Coal-Tar Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D227-47; ASA A109.3.

Asphalt-Saturated Asbestos Felts for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D250-47; ASA 109.4.

Asphalt-Saturated and Coated Asbestos Felts for Use in Constructing Built-Up Roofs, Specifications for, ASTM D655-47; ASA A109.5.

Coal-Tar Pitch for Roofing, Dampproofing, and Waterproofing, Specifications for, ASTM D450-41; ASA A109.6.

Coal-Tar Pitch for Steep Built-Up Roofs, Specifications for, ASTM D654-49; ASA A109.7.

Test for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing and Shingles, Method of, ASTM D451-40; ASA A109.8.

Test for Sieve Analysis of Nongranular Mineral Surfacing for Asphalt Roofing and Shingles, Method of, ASTM D452-40; ASA A109.9.

Sampling and Testing Felted and Woven Fabrics Saturated with Bituminous Substances for Use in Waterproofing and Roofing, Methods of, ASTM D146-47; ASA A109.10.

Test for Steam Distillation of Bituminous Protective Coatings, Method of, ASTM D255-28; ASA A109.11.

Woven Cotton Fabrics Saturated with Bituminous Substances for Use in Waterproofing, Specifications for, ASTM D173-44; ASA A109.12.

Mechanical

American Standard Approved –

Nomenclature for Gear Tooth Wear and Failure, B6.12-1954.
Sponsors: American Gear Manufacturers Association; American Society of Mechanical Engineers.

In Board of Review –

Surface Roughness, Waviness, and Lay, B46.1 (Revision of B46.1-1947).
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers.

In Standards Board –

Square and Hexagon Bolts and Nuts, B18.2 (Revision of B18.2-1952).
Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers.

Withdrawal Being Considered –

Rotary Cone Valves, B61.
Requested by: American Society of Mechanical Engineers.

Standards Withdrawn –

Code for Design of Transmission Shafting, B17c-1927 (R1947).

Shafting and Stock Keys, B17.1-1943.
Sponsor: American Society of Mechanical Engineers.

Mining

In Standards Board –

Quarry Safety Code, M28.1.
Sponsor: National Safety Council.

Office Equipment

American Standard Published –

Reflectances of Furniture for General Office Use, X2.1.3-1954.
Sponsor: National Office Management Association.

Paints and Varnishes

Reaffirmation Approved –

Test for Specific Gravity of Pigments, Method of, ASTM D153-54; ASA K41.1-1953 (Reaffirmed 1954).
Sponsor: American Society for Testing Materials.

Petroleum Products and Lubricants

In Board of Review –

Test for Distillation of Gasoline, Naphtha, Kerosene, and Similar Petroleum Products, Method of, ASTM D86-54; ASA Z11.10 (Revision of ASTM D86-53; ASA Z11.10-1953).

Test for Distillation of Natural Gasoline, Method of, ASTM D216-54; ASA Z11.11 (Revision of ASTM D216-53; ASA Z11.11-1953)

Test for Distillation of Gas Oil and Similar Distillate Fuel Oils, Method of, ASTM D158-54; ASA Z11.26 (Revision of ASTM D158-53; ASA Z11.26-1953).

Test for API Gravity of Petroleum and Its Products, Method of (Hydrometer Method), ASTM D287-54; ASA Z11.31 (Revision of ASTM D287-52; ASA Z11.31-1952).

Test for Distillation of Crude Petroleum, Method of, ASTM D285-54T; ASA Z11.32 (Revision of ASTM D285-52; ASA Z11.32-1952).

Test for Neutralization Value (Acid and Base Numbers) by Potentiometric Titration, Method of, ASTM D664-54; ASA Z11.59 (Revision of ASTM D664-52; ASA Z11.59-1952).

Test for Saponification Number of Petroleum Products by Potentiometric Titration, Method of, ASTM D939-54; ASA Z11.67 (Revision of ASTM D939-52; ASA Z11.67-1952).

Test for Specific Gravity of Petroleum and Its Products (Hydrometer Method), Method of, ASTM D1298-54; ASA Z11.84.
Sponsor: American Society for Testing Materials.

Photography

American Standard Published –

Method for Determining Spectral-Sensitivity Indexes and Group Numbers for Photographic Emulsions, PH2.6-1954 (Revision of Z38.2.4-1946). $0.50.
Sponsor: Photographic Standards Board.
Covers sensitometric and optical characteristics of photographic films, plates, and papers; sensitometric and densitometric instruments and procedures, including sensitivity ratings and exposure calculators; and photographic efficiency of radiant energy.

Photographic Grade Sodium Metaborate, Octahydrate, PH4.231-1954 (Revision of Z38.8.231-1948). $0.25.

Photographic Grade Sodium Tetraborate, Pentahydrate, PH4.233-1954. $0.25.
Sponsor: Photographic Standards Board.

In Standards Board –

Dimension for 70-mm Perforated Film for Cameras Other Than Motion Picture Cameras, PH1.20.

Focal Length of Lenses: Markings, PH3.13 (Revision of Z38.4.4-1942).
Sponsor: Photographic Standards Board.

16mm Sound-Focusing Test Film, PH22.42 (Revision of Z22.42-1946).

16mm 400-Cycle Signal-Level Test Film, PH22.45 (Revision of Z22.45-1946).

16mm Buzz-Track Test Film, PH22.57 (Revision of Z22.57-1947).

16mm Motion-Picture Projector for Use With Monochrome Television Film Chains Operating on Full Storage Basis, PH22.91.

35mm Magnetic Azimuth Alignment Test Film, PH22.99.
Sponsor: Society of Motion Picture and Television Engineers.

Reaffirmation Being Considered –

Printer Aperture Dimensions for Contact Printing 16mm Reversal and Color Reversal Duplicate Prints, PH22.49.
Requested by: Society of Motion Picture and Television Engineers.

Pipe and Fittings

New Project Requested –

Plastic Pipe.
Requested by: Chemical Industry Advisory Board.

Rubber Industry

In Board of Review –

Simple Preparation for Physical Testing of Rubber Products, Method of, ASTM D15-52T; ASA J1.1 (Revision of ASTM D15-52T; ASA J1.1-1953).
Sponsor: American Society for Testing Materials.

Safety

American Standards Published –

Safety Code for Woodworking Machinery, O1.1-1954 (Revision of O1.1-1944). $1.00.
Sponsors: Association of Casualty and Surety Companies (Accident Prevention Department); International Association of Governmental Labor Officials.
Covers prevention of traumatic injuries from the operation of woodworking machinery. Includes: plant layout, machine construction, drive, feed, speed, and control; also includes the guarding of the point of operation for power-operated circular saws, band saws, jointers, shapers, planers, sanders, veneer machinery, cooperage machinery, and other miscellaneous woodworking machines.

Safety Code for Controls and Signaling Devices for Graphic Arts Presses, B65.1-1954. $0.50.
Sponsors: Research and Engineering Council of the Graphic Arts Industry, Inc; National Safety Council.
Covers standard design, arrangement, designation, color coding, and safety interlocking features of push-button control stations for the operation of publication printing presses and commercial printing presses in order to prevent personal injuries from the operation of these presses; also visual or audible warning signals to be used when starting these presses.

American Standard Approved –

Recording and Measuring Work Injury Experience, Method of, Z16.1-1954 (Revision of Z16.1-1945).
Sponsors: Association of Casualty and Surety Companies (Accident Prevention Department); National Safety Council.

• • Henry Lamb, Safety Engineer of the American Standards Association, has been named as one of 12 members on an advisory committee to the Motor Vehicle Bureau of the State of New York. The committee will work with the Bureau in connection with the compulsory inspection of automobiles that starts in New York State May 1. James R. Macduff, Commissioner of Motor Vehicles, made the appointment. The Bureau has made use of the American Standard Inspection Requirements for Motor Vehicles, D7.1-1941, and has found it helpful in setting up its inspection requirements.

WHAT'S NEW ON AMERICAN STANDARD PROJECTS

Terminology for Automatic Controls, C85—

Sponsor: American Society of Mechanical Engineers.

The organization meeting of this committee was held January 5. Mark A. Princi, General Electric Company, is chairman of the newly organized committee, and G. W. Heumann, also of GE, is secretary.

A subcommittee was set up to recommend how the work is to be organized and what phases to take up first.

Photographic Sensitometry, PH2—

Sponsor: Photographic Standards Board.

Any one with a question on the correct use of the American Standard on photographic speed and exposure indexes may refer the question to a special subcommittee recently organized by PH2. Many requests for this type of information have been received by ASA. For this reason the special committee has been set up to interpret the standard and give advice on its use. Heading the committee is J. L. Tupper, Eastman Kodak Company. Other members and the organizations they represent are: M. G. Anderson, Ansco; Raymond Davis, National Bureau of Standards; S. B. Fulweiler, Master Photo Dealers' and Finishers' Association; R. L. Howard, Westinghouse Lamp Division; Peter Krause, Society of Photographic Engineers; A. G. Stimson, Photographic Society of America; J. P. Weiss, E. I. duPont de Nemours; and A. T. Williams, Weston Electrical Instrument Corporation.

Library Work and Documentation, Z39—

Sponsor: Council of National Library Associations.

Ralph W. Phelps, Engineering Societies Library, has been named chairman of Committee Z39; with Lawrence Leavey, St Vincent College, Latrobe, Pa., as vice-chairman. Robert E. Kingery, New York Public Library, is secretary.

The sponsor is making a survey of the groups concerned in this field to bring the membership of the committee up to date.

Shockproof Cable Terminal and Receptacle for Use on X-Ray Equipment (Proposed Federal Standard No. 72)—

Submitted by: General Services Administration.

A conference called for February 15 will consider whether this standard should be approved as American Standard. This is the first Federal Standard or specification to be submitted to ASA for approval under the recently inaugurated program for closer coordination of industry and government practices.

The General Services Administration which submitted it to ASA reports that cable terminals and receptacles of dimensions essentially identical to those prescribed by the Federal Standard have been furnished the government over the last several years. A number of x-ray equipment manufacturers are furnishing machines having these same cable terminals and receptacles to their "nongovernment" customers as well.

The standard has already received wide recognition. It has been approved by all Federal agencies concerned. The National Electrical Manufacturers Association has favorably reviewed it, and a British Standard now under consideration incorporates the drawing and dimensions the British Standards Institution has incorporated the drawing and dimensions of the Federal Standard in a British Standard now under consideration.

The conference on February 15 will be asked to make recommendations to ASA as to whether this Federal Standard should be approved under the General Acceptance Methods. It will also be asked to make recommendations concerning the method of handling future revisions and for possible additional work in this area.

WHAT IS YOUR QUESTION?

American Standard B18.2-1952 states that the regular semifinished hexagon and hexagon jam nut in sizes ¼ to ⅝ in. diameters is not recommended for new designs. Is the entire group of semifinished regular and hexagon jam nuts in sizes ¼ to 3 in. diameter to be dropped?

The new finished nuts listed in B18.2-1952 are a consolidation of the old light and regular semifinished nuts, using the proportions of the light nuts in sizes 1/4 through 5/8 in. and the proportions of the semifinished nuts in the larger sizes. The table on regular semifinished nuts was included in B18.2-1952 for use only in a transition period. The entire group of regular semifinished hexagon and hexagon jam nuts will eventually be dropped. Also, the finished nuts in sizes 1/4 through 5/8 in. will eventually replace the regular (unfaced) hexagon nuts.

What is the difference physically between a bolt and a screw?

In general, fasteners with a square or hexagon head to be turned with a wrench are designated as "bolts," and fasteners with a head having a slot or recess by which they may be turned by means of a screw driver are termed "screws." However, cap screws, which are quite similar to bolts, and tapping screws with hexagon heads are only two of the ex-

ceptions to this general classification. An effort was made several years ago to establish American Standard terminology in the field of threaded fasteners, and a draft was prepared by a subcommittee of ASA sectional committee B18. No recent work has been reported on this question.

On some American Standards, the price is on the inside front cover; on others it is on the back cover. Why not standardize?

The American Standards Association recommends giving the price and other publication information on the inside front cover and does so on all standards published by the Association. However, many American Standards are published by societies and associations that sponsor the standards and have their own publication practices.

The word "clearance" in relation to limits and fits is used by some to mean half the difference between the diameter of the shaft and the diameter of the hole. Others use it to indicate the difference between these two diameters. Which is correct?

The proposed American Standard, Preferred Limits and Fits for Cylindrical Parts, B4.1, supports the interpretation of "clearance" as the difference between the diameters of the hole and the shaft. This proposed American Standard is in the hands of the sponsor for submittal to the American Standards Association.

What method do the British use for evaluating surface finish?

This is covered in British Standard 1134-1950 "The Assessment of Surface Texture (Centre-Line-Average-Height Method)." The British "center-line average" is synonomous with the "arithmetical average" deviation from the mean which is being introduced as the standard method of measuring surface roughness in the new edition of American Standard B46.1 soon to be submitted to ASA for approval.

STANDARDS OUTLOOK

by LEO B. MOORE

A STANDARDS EXAMPLE

At the annual meeting of the Standards Engineers Society, several of those present asked me if I knew any cases that illustrate the opportunity, resource, and process of participation of a standards engineer at work.

A short time ago, a former student of mine visited me and recounted his experiences during the past three years as a standards engineer, the job he took after leaving school. His standards group is not large, but that has not dampened his enthusiasm.

He had noticed for some time that the stockroom seemed crammed to the rafters with a miscellany of materials and supplies. He talked this situation over with the man in charge on several occasions, both at lunch and in the stock area. It was agreed that much material lay idle and untouched, gathering dust and costing money. Finally the man in charge asked if standards could help the stockroom correct the situation.

As a result, the following procedure was carried out. First, the purchasing department sent to the standards group for review all requisitions for factory supplies. The standards engineer then sat down with the stockroom man and together they considered each requisition. They determined whether either the same material under another name or a suitable substitute was in stock. If they thought this was the case, they asked the issuer of the requisition for his approval to use the material from stock. Not every substitute was approved, but within six months the stockroom and its people began to take on new life. The process became a challenge, and its good results could be seen in lower inventory, more breathing space, and more orderly arrangement. The need for the standards engineer to sit in consultation with the stockroom force soon disappeared, for the stockroom people were pleased to review the requisitions themselves.

For most of us this much progress would be sufficient. But by this time the stockroom men on their own began to analyze why this condition had arisen and had been permitted to continue. They decided that they needed a catalog, a numbering system, a specifications book, and a stockroom layout designed for easier storing, handling, and order filling, not to mention inventory-taking. All these matters they discussed at length with the standards group, but they did the job with great pride themselves. They discovered several improvements in their internal operations. They decided, for example, to run a stripe down the lengths of metal bars, rod, and the like, so that these pieces would remain identifiable after a length had been cut off. Before two years had passed, the stockroom head himself estimated that they had removed $200,000 worth of supplies from the inventory. According to him, they had a better stockroom, better records, and a smoother operation.

This standards engineer ended his story by saying: "I never thought that I would enjoy so much the thrill of seeing a group seize upon this standards idea, turn it to their own advantage so willingly, and work together as a team in doing it. And, you know, I now have six men advertising standards for me better than I could do it myself!"

Mr Moore is Assistant Professor of Industrial Management at the Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

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